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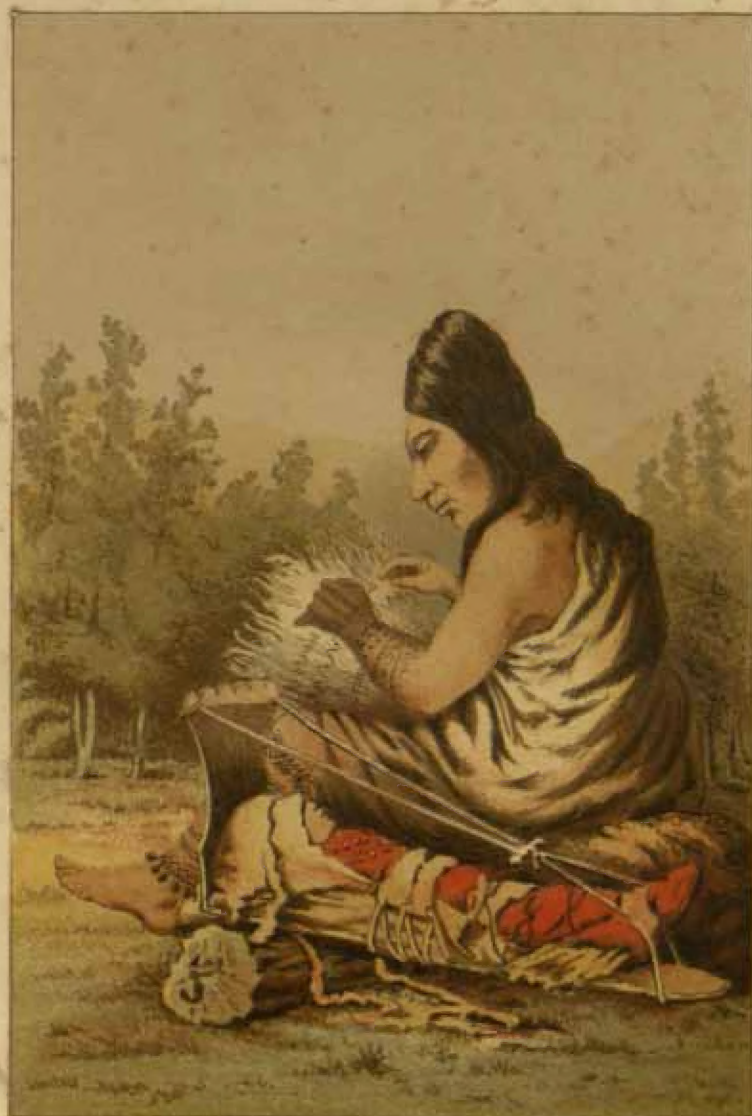
PREHISTORIC MAN.

VOLUME II.









CAWWELITOKS:

A FLATHEAD WOMAN AND CHILD.

Painted by D. Wilson, LL.D., from sketches by Felix Kane.

PREHISTORIC MAN

*Researches into the Origin of Civilisation
in the Old and the New World.*

BY

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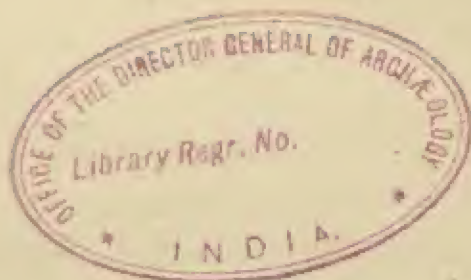
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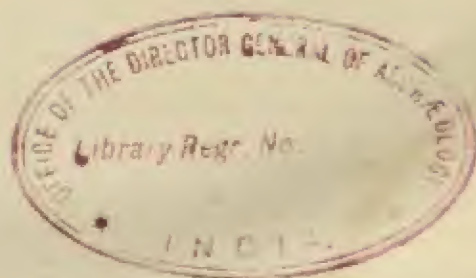
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CHAPTER XVI.

PRIMITIVE ARCHITECTURE.

EARTH PYRAMIDS—ARCHITECTURAL DISCLOSURES OF COPAN—MYSTERIOUS RUINS OF PALENQUE—SCULPTURES OF A LOST RACE—REAPPEARANCE OF THE ANCIENT TYPE—WIDE EXTENT OF RUINS—QUICK PALACES OF UTAHLAN—TRACES OF TWO ERAS—TRADITIONS OF A LIVING CITY—CHARACTER OF THE ARCHITECTURE—UNIQUE STYLE OF ORNAMENTATION—NATIVE CHARACTER OF CIVILISATION—CONTRAST OF MEXICO AND PERU—CYCLOPEAN MASONRY AT SUZCO—RUINS AT ATACAMA—PERUVIAN ROADS AND AQUEDUCTS—PRIMITIVE ARCHITECTURE.

THE American continent preserves, in its earth-pyramids, hill-forts, and river-terrace enclosures, familiar forms of constructive skill, such as are found wherever the footprints of infantile human progress remain uneffaced by the works of later intruders. There, however, such traces of the combined labour of man in the earlier stages of transition from the nomad hunter to the settled claimant of the soil occur on a scale, as to number and magnitude, without a parallel among such earth-types of the walled cities of Nimrod, and the pyramids of Cheops or Cephrenes. They are characteristic memorials of the partially developed civilisation of that mysterious people, known from such remains as the race of the Mound-Builders. Their structures could not gather richness from the fretting tooth of time. They were truly builders, but not architects. Buried beneath their ancient mounds lie sculptures fit to vie with some of the adornments of mediæval architecture; but on the edifices themselves, so far as now appears, they expended none of that decorative design which elevates the constructive art of the builder into one of the fine arts, and blends together the

ornamental and the useful in the most enduring of all national chronicles. To study the true native architecture of the New World, we have to leave behind us those monuments of forgotten generations; and, amid the tropical forests of Central America and Yucatan, explore the silent memorials of a no less mysterious but more eloquent past. There still tower above forests dense with the growth of ages, ruined temples which stood before the cocoa-nut palm and the gigantic ceiba encroached on their abandoned courts and terraced walls; and into which the men of long-buried generations built their love of power, their wealth of thought, and all the proudest aspirations of their faith.

It was at Copan that Stephens, the enterprising explorer of the antiquities of Central America, first beheld the forgotten memorials of its ancient civilisation; and, as he says, with an interest perhaps stronger than he had ever felt in wandering among the ruins of Egypt, he explored, amid the dense forest in which they were buried, the remains of an ancient city, some of the structures of which, to his experienced eye, presented, with more elegance of design, a workmanship equal to the finest monuments of Egypt. Here at length were not only traces of the obliterated history of an unknown race, but "works of art, proving, like newly discovered historical records, that the people who once occupied the continent of America were not savages." Toiling onward through the tangled growth of tropical vegetation, intermingled with friezes and fragments of statuary, and ascending the steps of a vast enclosure terraced with sculptured tiers perfect as those of the Roman Amphitheatre, he looked down on evidence of native energy and intellect not less wonderful than all that America has since borrowed from nations of another continent. The traveller had himself stood in the silent shadows of Petra, and wandered amid the ruins of Egypt's cities of the dead. Those have each their story, and awake the memories of a definite past; but when he asked the native Indians who

were the builders of those ruins ? they answered only *Quien sabe?* Who knows ? And he had no wiser answer to substitute for their stolid reply.

The existence of such remains had long before awakened attention ; though, amid the circulation of vague and exaggerated rumours of their grandeur and extent, no very definite idea could be formed of the truth. So early as 1750, a party of Spaniards travelling in the province of Chiapas, suddenly found themselves in the midst of ruins covering an area of some twenty miles in extent, and known to the Indians only by the descriptive designation of *Casas de Piedras*. It was the first stray waif of the wreck of an extinct Southern empire, which, with every fresh discovery, acquires increasing interest. Mexico had been a province of Spain for nearly two centuries and a half ; yet neither note of Spanish conquistador, nor vaguest native tradition, indicates the knowledge that such a city had ever existed. It received the name of Palenque, by which it is still known, from a rude Indian village in its vicinity ; and since then it has been explored by Royal Commissioners acting under the orders of Charles III. of Spain ; by a second Royal Commission, of which Dupaix was the leader, under the authority of Charles IV. ; by M. Baradere, the enterprising and zealous investigator, to whom we owe the publication of Dupaix's work ; and, finally, by the modest, but more effective labours of Messrs. Stephens and Catherwood. The results have familiarised us with the sculptures, hieroglyphic tablets, paintings, and bas-reliefs in stucco : and with the ceiled halls and corridors inroofed by overlapping stones, of an architecture which wrought out edifices of magnificent extent without the use of the arch ; but to this day no more is known of the nameless city, or its builders, than of the significance of the hieroglyphics which mock its explorers with their tantalising records.

But if the hieroglyphic inscriptions still defy every attempt at decipherment, the sculptures to which they are

attached speak a language intelligible to all. Take, for example, one of the Palenque bas-reliefs, drawn by Catherwood from the original on one of the piers of the vast terraced building called the Palace. We can be at no loss in deciphering the record it preserves of the physical characteristics, as well as of the intellectual and artistic capacity of the people by whom the nameless city was reared. It supplies an unmistakable answer to the oft renewed question,—“Were they the same race as the modern Indians?” The bas-relief includes a group of three figures, with the strange costume and decorations, and the stranger physiognomy of the unknown people who once lorded it in the palaces of Palenque, over the mighty city and the regions which contributed the means whereby such proud structures were reared and maintained. The original, which had been modelled in a composition hard as stone, was found in a nearly perfect condition, and had been painted in elaborate colours of which many traces remained. “The principal figure,” Mr. Stephens notes, “stands in an upright position, and in profile, exhibiting an extraordinary facial angle of about forty-five degrees. The upper part of the head seems to have been compressed and lengthened, perhaps by the same process employed upon the heads of the Choctaw and Flathead Indians. The head represents a different species from any now existing in that region of country; and supposing the statues to be images of living personages, or the creations of artists according to their ideas of perfect figures, they indicate a people now lost and unknown.”¹

Bearing in remembrance that the intelligent traveller ultimately favoured the idea that the race of the Builders was the same as the degenerate Indians still occupying the villages around their ruined cities, it is important to separate his actual observations from theories subsequently made to harmonise with Morton's *Typical American Race*. At

¹ Stephens' *Travels in Central America*, vol. ii. chap. xviii.

² *Travels in Yucatan*, vol. ii. chap. xxiv.

Palenque he recognised the remains of a cultivated, polished, and peculiar people, who had passed through all the stages incident to the rise and fall of nations, reached their golden age and perished, without even a tradition of their name surviving. Cortes, in his march from Mexico to Honduras, by the Lake of Peten, must have passed within a few leagues of the city; but its ruins were already desolate as now, or it cannot be doubted that the conqueror would have made its name famous by a desolation like that which illumines "the Venice of the Aztecs." But the American traveller saw in those regions, thus rich with the ruins of an extinct civilisation, not only the degraded and servile Indian, but the scarcely less degraded descendant of the Spanish conqueror; and, therefore, he cherished the belief that, restored to independence, the Indian might develop anew the capacity of the ancient builders; and once more hew the rocks, and carve the timber, into sculptures and devices as full of intellect, and as replete with native originality of thought, as the carvings and reliefs on the ruins of Palenque. Nor do I doubt the possibility of such an elevation for even more degraded races than the Indians of Central America. But if a race of native sculptors should again hew out the representations of their civic and religious ceremonials in equally skilful bas-reliefs, it is contrary to all experience that they would sculpture forms and features totally different from their own. It is important, therefore, to recall to mind an incidental and unheeded note recorded by Mr. Stephens when leaving the ruins of Palenque, with the character of its sculptures still fresh in his memory. "Among the Indians," he observes, "who came out to escort us to the village, was one whom we had not seen before, and whose face bore a striking resemblance to those delineated on the walls of the buildings. In general, the faces of the Indians were of an entirely different character, but he might have been taken for a lineal descendant of the perished race."¹

¹ Stephens' *Travels in Central America*, vol. ii. chap. xxi.

Such a chance reappearance of the ancient type entirely corresponds with the experience of the ethnologist in the Old World. The ruined Alhambra is not the work of the race to whom it now pertains, but the blood of the old Moors of Granada can still be traced among the rural population of Christian Spain. The population of modern Italy includes the descendants of Gaul, Lombard, Ostrogoth, Arab, Norman, Frank, and Austrian intruders; but among them all the observant traveller still detects, at times, the old native Roman type, essentially the same as he sees sculptured on the tomb of Scipio, or the column of Trajan: the descendants of the race by whom the marble palaces of Rome were reared, while yet the ancestors of Gaul and Goth, Arab, Norseman, and German, were but the rude mound-builders of Europe, or nomads of Asiatic deserts.

It does not come within the purpose of this work to review in detail the numerous monuments of ancient American art, described in narratives already familiar to the reader. It will suffice to indicate their extent and character. In the first explorations of Messrs. Stephens and Catherwood in the interior of Central America, Chiapas, and Yucatan, they visited eight ruined cities, the very existence of which was in most cases unknown to the inhabitants of the country in which they lie; and in the subsequent narrative of their journey in Yucatan, Mr. Stephens describes the results of visits to forty-four ruined cities, or architectural sites. The materials thus contributed to America's ancient native history are invaluable. Zealous antiquaries of the United States had been surveying the mounds of the Ohio and Mississippi Valleys, exploring the strange earthworks of Wisconsin, and diligently searching for Phœnician characters or Scandinavian runes on the Dighton rock, to give substantiality to the dream of mighty confederacies that had preceded them. While the great tide of emigration swept westward, exterminating the Indian with his forests, and effacing the feeble footprints on his trail, the enterprising

pioneer sent back word from time to time of ruined enclosures and fenced cities, which gathered new features at every fresh narration, and filled the imagination with vague and wondering faith in a mighty past. But meanwhile the inhabitants of Spanish America had been dwelling for centuries in the very midst of ruins wonderful for their magnitude, rich variety, and beauty, with a stolid indifference even more wonderful than the disclosures it so long withheld. Of the fifty-two sites of ancient edifices, some of them the ruins of vast cities, examined by Mr. Stephens, few had ever been visited by white men; and when it is considered how small a portion of Yucatan, or Central America, has yet been explored, it is difficult for fancy to exaggerate the wonders of native art and civilisation which have still to be revealed.

Some of the desolate cities thus discovered have been traced to the era of the Conquest, but they serve thereby to illustrate by their contrast the remote and independent origin of the more ancient remains. The court of the native kings of Quiché was held in the palaces of Utatlan; and that city was the most sumptuous one visited by the Spaniards. But when explored by Mr. Stephens, corn was growing among the ruins, and the site was in use by an Indian family claiming descent from the royal line, while occupying a miserable hut amid the crumbling Quiché palaces. Their remains appear to be of Mexican rather than of Yucatan or Central American character. The principal feature now remaining, called *El Sacrificatorio*, closely corresponds to the Mexican *teocallis*; and in entire accordance with this, a figure of baked clay, found among the ruins, presents the modern Indian features, executed in a style of art greatly inferior to the totally diverse sculptures of Palenque and other ruins of unknown date.¹

The intermixture of traces of two distinct eras within the

¹ *Vide* Engraving, "Figures found at Santa Cruz del Quiché," Stephens' *Travels in Central America*, vol. ii.

ancient Aztec dominions, is as clearly recognisable as in the Hellenic and Byzantine art of the later empire of Constantine. The general character of the terra-cottas and sculptured figures of Mexico is rude and barbarian; yet in some of the ancient ruins, as at Oaxaca, terra-cotta busts and figures have been found which justly admit of comparison with corresponding remains of classic art.¹ Such indications of two entirely distinct periods and styles accord with all the most ancient native traditions, which concur in the idea of successive migrations, foreign intrusion, and the displacement of a highly civilised people. Of those, Ixtlilxochitl gives a coherent digest, which, apart from his dates, seems to find confirmation from the diverse characteristics of ancient art in Mexico and Central America. According to the old Tezcucan chronicler: on the intrusion of the Aztec conquerors, which he places in the middle of the tenth century, the Toltecs, who escaped their fury, spread themselves southward over Guatemala, Tecuantepec, Campeachy, Tecolotlan, and the neighbouring coasts and islands.² The architectural chronicles, however, would rather suggest that, in deserting Anahuac for the southern regions, where such abundant traces have been found, the Toltecs migrated to a country already in occupation by a branch of the same civilised race.

Of the two distinct classes of ruins in Mexico, Central America, and Yucatan, including relics of widely different periods, the one consists chiefly of edifices reared as well as occupied by the races supplanted and enslaved by the conquering Spaniards; the other finds its illustrations in Palenque, Quirigua, Copan, and other cities, already in ruins before the intruding European mingled the descendants of native conquered and conquering races in one indiscriminate degradation. That such remains are found only in a few imperfect and scanty traces on the Mexican soil, accords

¹ Vide *Antiquité Mexicaine*, tom. iii. pl. 36.

² Ixtlilxochitl *Relaciones*, ms. No. 5, quoted by Prescott.

with the transitional characteristics of its latest native conquerors, who appear to have played the same part there as the Tartar intruders on the southern sites of ancient Asiatic civilisation. But as we descend from the Mexican plateau along the south-eastern slope of the Cordilleras, remains of art, such as tradition ascribes to the genius and refinement of the peaceful and industrious Toltees, multiply on every hand; and even mingle with ruder arts of a remote antiquity recovered from the graves of Chiriqui and the Isthmus of Panama.

But a special interest attaches to the ruined capital of Quiché, though of a different and accidental character; for it was there that the indefatigable explorers first heard that, on the other side of the Great Sierra, was a living city, large and populous, occupied by descendants of the ancient race of builders, as in the days before the Conquest or the discovery of America. In earlier years the Padre, their informant, had climbed to the lofty summit of the Sierra, and from thence, at a height of ten or twelve thousand feet, looked over an immense plain, extending to Yucatan and the Gulf of Mexico, and beheld at a great distance, as had been told him, a large city, with turrets white and glittering in the sun. The Indian traditions tell that a native race, speaking the Maya language, guard there the marches of their land, and put to death every one of the race of strangers who approaches its borders. "That the region referred to," says Stephens, "does not acknowledge the government of Guatemala, has never been explored, and that no white man ever pretends to enter it, I am satisfied;" and—speculating on the possibility that there still live the Indian inhabitants of an Indian city, as Cortes found them, who can solve the mystery that hangs over the traces of native civilisation, and perchance even read the hieroglyphic inscriptions of Copan and Palenque,—he exclaims: "One look at that city was worth ten years of an everyday life!"¹ In the sober thoughts of a later period, the enthusiastic traveller held to

¹ Stephens' *Travels in Central America*, vol. ii. chap. xi.

the belief that the Padre had not only looked down on the white towers and temples of a vast city, but that the city might still be the abode of a native race, the descendants of the civilised nations of ante-Columbian centuries. As he draws his interesting narrative to a close, he once more turns "to that vast and unknown region, untraversed by a single road, wherein fancy pictures that mysterious city, seen from the topmost range of the Cordilleras, of unconquered, unvisited, and unsought aboriginal inhabitants." Its exploration presented to the traveller's mind a tempting field for future enterprise; as unquestionably it is, even should the result only prove, as is most probable, another mysterious and magnificent pile of ruins.

As a general characteristic, the ruined cities of Central America betray everywhere evidences of a barbaric pomp, wherein utility and convenience are sacrificed to architectural display. Though constructed, moreover, for the most part, of stones of moderate size, there is still that same laborious aim at vast and massive solidity which constitutes the essential characteristic of megalithic architecture. Huge pyramidal mounds and terraces are reared as platforms for ponderous structures of only a single storey in height; and presenting, in the interior, a narrow and imperfectly-lighted vault, roofed in by converging walls, which supplied the poor substitute for the arch. It is the comparatively unintellectual civilisation of a nation in that stage of advancement where art and even science have been sufficiently developed to contribute to the sensuous cravings for magnificent display, but are as yet of little avail for mental and moral progress. Such architectural feats are the work of absolutism, controlled by the predominating influences of a priesthood, under which pomp and oppressive magnificence take the place of the real power of the throne; and the people are subjected to a despotism the more dread, because of its subtle direction of national festivities, no less than of fasts and sacrifices.

But while we witness everywhere among the ruins of Central America, the same evidences which are seen in the architecture of Egypt, Hindustan, Assyria, and Babylon, of a people's strength and ingenuity expended at the will of some supreme authority, and working out results in which they could have little real interest or pleasure: it is vain to attempt to trace to such foreign sources the models of those creations of native power and skill. They are in all respects essentially unique. The pyramidal mound-structures are no more Egyptian than the earthworks of the Scioto Valley; the hieroglyphics bear little more resemblance to those of the Nile than the rude Indian carvings on Dighton rock; and the cornices, bas-reliefs, and architectural details of every kind, supply at most only stray analogies to ancient forms: cheating the eye, like chance notes of a strange opera in which the ear seems to catch the illusive promise of some familiar strain. While, moreover, the architecture and sculpture are essentially native, they disclose, amid their barbaric waste of magnificence, a wondrous power of invention, and frequent indications of a taste capable of far higher development. At Uxmal a terrace of cut stone, six hundred feet in length, forms the platform on which a second and third terrace of narrower bases are raised, to a height of thirty-five feet; and on this is reared the Casa del Gobernador, decorated, throughout its whole façade of three hundred and twenty feet, with rich, strange, and elaborate sculpture. Of this magnificent ruin Mr. Stephens remarks: "There is no rudeness or barbarity in the design or proportions; on the contrary, the whole wears an air of architectural symmetry and grandeur; and as the stranger ascends the steps and casts a bewildered eye along its open and desolate doors, it is hard to believe that he sees before him the work of a race in whose epitaph, as written by historians, they are called ignorant of art, and said to have perished in the rudeness of savage life. If it stood in Hyde Park, or the

Garden of the Tuileries, it would form a new order, I do not say equalling, but not unworthy to stand side by side with the remains of Egyptian, Grecian, and Roman art." It is untrue to say of such a people, though they have left no name behind them: "They died, and made no sign!"¹ May we not rather exclaim, with Ruskin, "How cold is all history, how lifeless all imagery, compared to that which the living nation writes, and the uncorrupted marble bears! How many pages of doubtful record might we not often spare, for a few stones left one upon another!"²

There is historical evidence that some of the ruined cities were in occupation at the era of the Conquest, but the proof is no less conclusive that others were already abandoned ruins. Any inference therefore as to the recent date of the architecture already described is as fallacious as that which should assign the Colosseum to the builders of St. Peter's, because the modern Roman continues to dwell under the shadow of both. The civilisation of Central America grew up on the soil where its memorials are still found, with as few traces of Asiatic as of European or African influences affecting it at any stage in its progress. It was, moreover, the growth of many generations, and is seen by us at a stage far removed from that in which it had its beginning. A national taste and style had been matured, so that we find a certain uniformity pervading the widely-scattered monuments of its intellectual development. But it had prevailed until the cultured artist had learned to work with freedom amid its prescriptive forms; and its ornamentation exhibits an exuberance of inventive fancy, akin to that of Europe's thirteenth and fourteenth centuries.

It is not therefore amid the long maturing civilisation of Central America and Yucatan that we can hope to recover the germs from whence it sprung; nor, though we find the Aztec architecture of an inferior character, are we, on that

¹ Prescott's *Conquest of Mexico*, B. v. ch. iv.

² *Seven Lamps of Architecture*, p. 164.

account, to trace in it the evidence of a less matured stage. Its character seems rather to confirm the traditions of an intruding race by whom the refined arts of the Toltecs were arrested in their progressive expansion, or partially borrowed and debased in their adaptation to the barbarous rites of the conquerors. But the architectural remains, as well as other traces of art and skill of another remarkable people, embody records of an indigenous civilisation no less interesting than any which have been glanced at.

The ancient empires of Peru and Mexico are indissolubly associated on the page of history, in the melancholy community of suffering and extinction. Yet, while alike exhibiting extensive dominions under the control of a matured system of social polity, and vitalised by many indications of progress in the arts of civilisation: they present, in nearly every characteristic detail, elements of contrast rather than of comparison. Between the fifteenth and seventeenth degree south, the Andes rise to a height varying from twenty-four to upwards of twenty-five thousand feet, from whence as they sweep northward across the tropical line, they gradually subside into a line of hills as they enter the Isthmus of Panama. Sheltered amid the lofty regions that rise step by step on their steep sides, a gentle and industrious population found within the tropics all the effects of varying latitude in relative elevation; while the narrow strip of coast land, rarely exceeding twenty leagues in width, gave them command of the burning regions of the palm and the cocoa tree, fanned by the breezes of the Pacific. Such a country, under the gradual development of a progressive civilisation, would have seemed fitted only for detached and independent states, or a federation resembling in some degree that of the cantons of the Swiss Alps. But the most remarkable and enduring monuments of the civilisation of the Incas are their great military roads, fortresses, post-stations, aqueducts, and other public works: by means of which a coherent unity was maintained

throughout dominions broken up by mountain ravines, narrow ocean-bounded lowlands watered under a tropical sun only by a few scanty streams, and pathless sierras elevated into the regions of eternal snow. The Spanish conquerors, with all their boasted superiority, allowed the highways of the Incas to fall into ruin; yet, even after the lapse of three centuries, Humboldt recorded as his impression on surveying one of them in its decay: "The great road of the Incas is one of the most useful, and at the same time one of the most gigantic works ever executed by man."¹

The Peruvian builder appears to have wrought from choice with immense masses of stone; and though columns, bas-reliefs, and other external ornaments are rare, there are not wanting examples of elaborate sculpture in a style admitting of comparison with those of Central America. D'Orbigny gives an engraving of one doorway hewn out of a single mass of stone, and decorated with sculptures in low relief, arranged in a series strikingly suggestive of ideographic symbolism. It forms the entrance to a ruined temple at Tiaguanaco, in the Aymara country, which surrounds Lake Titicaca, with its mysterious architectural remains, assigned by the Peruvians themselves to an older date than the traditional advent of the Incas.² Dr. Tschudi has illustrated and described some of the most remarkable specimens of cyclopean remains. In the House of the Virgins of the Sun, at Cuzco, the huge masses of masonry are of so striking a character as to have become objects of common wonder. One of these, prominent among the polygonal blocks ingeniously dovetailed into each other, alike from its size and complicated figure, is popularly styled the stone of the twelve corners. Spanish authors describe a fillet or cornice of gold, a span and a half in width, which ran round the exterior and was imbedded in the masonry;

¹ *Vues des Cordillères*, p. 294.

² D'Orbigny's *L'Homme Américain*, plate 10.

while, both externally and internally, it blazed with gems and gold, and was hung with costly hangings of brilliant hues. Now its remains furnish the foundation for a convent of the Dominican friars; and only attract notice by the solid masonry, constructed on a scale well calculated to suggest anew the art of the fabled Cyclops, to account for their massive and enduring strength.

Mr. J. H. Blake, to whose Peruvian researches I have already been indebted for interesting illustrations of ancient arts and customs, has favoured me with his notes on this department, in which his training and skill as a civil engineer render him peculiarly qualified to judge. "On the desert of Atacama, near the base of the Andes, in lat. $23^{\circ} 40' s.$, the walls of nearly all the buildings of an ancient tow'p remain, remarkable for the peculiarity of the situation, admirably adapting it for defence. It lies on the face of a hill. On the one side is a natural ravine, and on the other an artificial one, intersecting each other at the summit of the hill, thus rendering it impregnable on all sides but one. This side presents an inclined plane in the form of an acute triangle, across which, extending from side to side, from the base to the summit, are rows of buildings, each succeeding row being shorter than the one below it, till at the top sufficient space is left only for a single building which overlooks all the others. These buildings are all small, and nearly of uniform size, each consisting of a single apartment. The walls are constructed of irregular blocks of granite cemented together, and the front walls are all pierced with loop-holes, both near the floor and about five feet above. The floors are of cement, and are on a level with the top of the wall of the building in front. Each building is provided with a large earthen jar, sunk below the floor, capable of holding from thirty to forty gallons. These were probably used for storing water. A short distance from this old town is a small fertile valley, watered by streams from the Andes, while the rest of the country

for many leagues round is entirely destitute of vegetation." Such, it is obvious, can only illustrate the ruder arts and domestic habits of a settlement in an exposed situation remote from the centres of highest Peruvian civilisation. But the most enduring memorials of Inca sovereignty are those associated with the construction and maintenance of the public roads, post-houses, and telegraphic corps, by means of which a coherent unity was preserved throughout the vast empire. Of the great artificial roads, Mr. Blake notes that which leads from Quito to Cuzco, and thence southward over the valley of the Dessaguadero, as the most extensive. It is built with enormous masses of porphyry, and is still perfect in many parts. Where rapid streams were encountered, suspension bridges were constructed by means of ropes formed of fibres of the maguey. Some of them exceeded two hundred feet in length, and so well did this kind of bridge answer the purpose for which it was designed, that it was adopted by the Spaniards, and to this day affords the only means of crossing many rivers both in Peru and Chili. The remains of one of those great roads are still to be seen in the most barren and uninhabitable part of the desert of Atacama, as also the *tambos*, or houses for rest, erected at intervals throughout the whole length for the accommodation of the Inca and his suite. Numerous canals and subterranean aqueducts were formed to conduct the waters of lakes and rivers for irrigating the soil, some of which are still in use by the Spaniards. One in the district of Condesuyar, of great magnitude, is more than four hundred miles in length. But those great works, like the roads, were not confined to the more fertile parts of the country. In the southern part of Peru, and in the midst of the desert, extensive tunnels were excavated horizontally in sandstone rock, through which the water still runs, and is conducted into reservoirs from whence it is taken to the various gardens of Pica: producing in this arid and desert land one spot which in the luxuriousness of its vegetation,

is rarely found surpassed in places the most favourably situated for cultivation.

A diversity of construction is apparent in the aqueducts and other erections, indicating an intelligent skill in adapting the resources of the locality to the exigencies of the works. Some of the aqueducts, such as that in the valley of Nasea, are built of large blocks of masonry; while others, like the one which conveyed the waters of the spring of Amiloe to the city of Tenochtitlan, are formed of earthen pipes. But such works also illustrate the skill of very different eras; and while they survive to shame the scepticism of modern critics as to the marvellous native civilisation of Peru, some of them recall centuries to which the Peruvians themselves looked back, in the days of the Incas, as an ancient and half-forgotten past. On the shores of Lake Titicaca, extensive ruins still remain, characterised by a massive simplicity which seems to point to them as examples of primitive native architecture; and as such of a higher value than any remains of Mexico or Central America. They are believed to have been in the same condition at the date of the Conquest, and to have furnished the models of that architecture with which the Incas covered their wide domains. They reveal the only truly primitive architecture of the New World; and, therefore, suggest a possible centre from whence that intellectual impulse went forth, pervading with its influences the nations first discovered in the sixteenth century on the mainland of America: although at that date the distinct centres of Mexican and Peruvian arts were in operation independent of each other, and the two had moved in opposite directions, unconscious of rivalry in the development of a native civilisation.

CHAPTER XVII.

CERAMIC ART.

ART TRACES OF DOMESTIC LIFE—MODELLING AND GRAVING TOOLS—CHINOOK WOVEN VESSELS—ANCIENT PERUVIAN BASKET-VESSEL—POTTERY OF THE GULF—CERAMIC ART OF THE MOUND-BUILDERS—PECULIAR ORNAMENTATION—USE OF THE POTTER'S WHEEL—COMMON CHARACTERISTICS—AMERICAN ARCHEOLOGIST—ACCUMULATING EVIDENCE—MEXICAN ANTIQUITIES—ART COMMON TO TWO HEMISPHERES—THE AMERICAN FRETTE—THE MODELLER'S ART—MEXICAN TERRA-COTTAS—COMIC CLAY MASKS—POTTERY OF CENTRAL AMERICA—HIROGLYPHIC VASE—CHINQUI EARTHENWARE—PORCELAIN MUSICAL INSTRUMENTS—PERUVIAN MENTAL CHARACTERISTICS—EXUBERANT FANCY—POTTERY OF PERU—ACOUSTIC VESSELS—ANALOGIES TO ASIATIC ART—HIGH ARTISTIC STYLE—FICTILE PORTRAITURE—PORTRAIT-VASES—GROTESQUE AND HUMOROUS DESIGNS—ILLUSTRATIONS OF NATIVE CIVILISATION—NORTHERN AND SOUTHERN ART.

THE imposing national character of architectural remains claims for them a prominent place among the materials of archaeological history ; but the real progress of a people is recorded with more graphic minuteness, where the traces of taste and skill are found in combination with the appliances of daily life. Among such historic materials the products of ceramic art merit on many accounts a foremost place. The plasticity of the potter's clay renders it readily susceptible of every varying phase of national taste, so that minute traits of ethnical diversity find expression in the forms which it receives at his hands ; and nowhere has incipient civilisation given more distinctive characteristics to fictile art than in the New World. Tried by this test of æsthetic development, the unity of the American as a distinct race disappears as unequivocally as when fairly subjected to that of cranial formation, from which such supposed homogeneous characteristics have been chiefly deduced. The northern

region, lying around and immediately to the south of the great lakes, has its peculiar fictile ware; the Southern States, bounded by the Gulf of Florida, have their characteristic pottery and terra-cottas; the ancient mounds of the Mississippi Valley disclose other and diverse types of ceramic art; while Mexico, Central America, Brazil, Chili, and Peru abound in wondrously varied memorials of skill and exuberant fancy wrought from the potter's clay.

The most common form of pottery made by the Northern Indians is that of the gourd, with ears, or holes perforated at the rim, for suspending the vessel over the fire. Considerable ingenuity also appears to have been expended in modelling clay-pipes, decorated with incised patterns, or wrought into fanciful shapes and forms of animals. Fragments of pottery are turned up by the plough on the sites of old Indian villages throughout most of the Northern States, and in Canada, the incised patterns of which often present a curious correspondence to the simple linear devices on the ancient sepulchral pottery of Europe. The implements of pointed bone with which those were executed on the soft clay, are of common occurrence; and the better finished tools of the Mound-Builders have also been recovered. They are made of bones of the deer and elk: some flat and chisel-shaped, others with round, curved, and tapering points; but all, notwithstanding their great decay, showing traces of careful workmanship. Besides those are also found copper chisels and gravers employed in the modelling and ornamentation of the more delicate and artistic fictile ware.

The manufacture of pottery appears to have been pursued among the northern tribes of America, with little variation, during many generations; nor is it even now wholly superseded among their survivors by the more serviceable articles which the fur-traders supply.¹ But this by no means

¹ Vide Catlin's *Manners and Customs of the North American Indians*, Letter 16; and Dr. F. V. Hayden's *Contributions to the Ethnography and Philology of the Indian Tribes of the Missouri Valley*, p. 355.

destroys either the interest or the mystery attached to older relics. Man's capacity for progress under certain favourable circumstances is not less remarkable than his unprogressive vitality at many diverse stages of advancement: as shown in the forest Indian, the Arab, the Chinese; and in illustration of this we find Mr. Squier remarking of the pottery of southern areas of the American Continent: "The ancient pottery of Nicaragua is always well burned, and often elaborately painted in brilliant and durable colour. The forms are generally very regular, but there is no evidence of the use of the potter's wheel; on the contrary, there is reason to believe that the ancient processes have undergone little or no modification since the Conquest."¹ But while we thus find the native arts uninfluenced by contact with the matured civilisation of Europe for upwards of three centuries; and discover ancient processes of the Mandan and Arikaree potters still practised by their descendants near the head waters of the Missouri: the evidence is no less distinct which proves that the art was limited to certain tribes. The transition in this respect is not a gradual one, like that which may be supposed to connect the whole fictile manufactures of the eastern tribes from the St. Lawrence to the Gulf of Florida. To the west of the Rocky Mountains the potter's art is superseded by manufactures and accompanying customs of a totally different kind.

The Chinooks, for example, inhabiting the tract of country at the mouth of the Columbia river, carve bowls and spoons of horn, highly creditable to their ingenuity and decorative skill; but their cooking vessels are baskets made of roots and grass woven so closely as to serve all the purposes of a pitcher. The frontispiece, Plate II., represents Cawwelitcks, one of the Cowlitz Flatheads, plaiting a waterproof basket; while her child lies beside her on its cradle-board, undergoing the process of cranial deformation. Similar vessels are in use

¹ Squier's *Nicaragua*, vol. ii. pp. 337, 338.

among the Indians of the Pacific coast as far south as lower California, wrought in black and white grasses, in ornamental patterns, or with representations of men and animals, in black, on a white ground. Still farther south they are made by the Pah-Utah Indians, near the thirty-fifth parallel, in New Mexico, of slips of coloured reed ; and are described as exhibiting considerable taste as well as skill.¹

In this curious application of a rude ingenuity, we find the perpetuation of arts anciently practised in the seats of civilisation of the southern continent. Among a variety of objects obtained by the United States Astronomical Expedition to the Southern Hemisphere, was a closely woven basket found in a Peruvian tomb, along with pottery and numerous other relics ; but described as " used for holding liquids, and which it would still retain."² Many similar indications suffice to show that the influence of social progress in Mexico and Central America, if not also in Peru, extended partially among the tribes to the west of the Rocky Mountains even into high northern latitudes ; while it was inoperative throughout the vast areas drained by the Mississippi and its tributaries, during any period of their occupation by the Red Indian tribes.

The substitution of wicker or straw-work for pottery, cannot, however, be assumed as any evidence of progress ; though it is better suited to the wandering life of forest tribes than the fragile ware which ministers so largely to the convenience of settled communities. The mode of using such cooking-vessels is as simple as it is ingenious. The salmon, which constitutes the principal food of the Chinooks along the Columbia River, is placed in a straw basket filled with water. Into this red-hot stones are dropped until the water boils, and the fish is dressed as expeditiously as if

¹ *Explorations and Surveys of Route for a Railway from the Mississippi to the Pacific Ocean* in 1853-54, vol. iii. "The Indian Tribes," p. 51, plate 41, figs. 14, 15, 16.

² *United States Astronomical Expedition*, vol. ii. Append. E. p. 117.

boiled in an ordinary kettle over the fire. But though such baskets and cooking vessels possess obvious advantages to migratory tribes, they are confined to those on the Pacific coasts; and the causes of a difference so obvious must be sought for in other sources, pointing to essential distinctions in arts as well as in customs, between the flat-head tribes of California and Oregon, and the nomad potters to the east of the Rocky Mountains.

Alike in the Old World and the New, the seats of highest civilisation, and of most progressive enterprise, are now found within the temperate zones. But it was not so with either of them in ancient times. The civilisation of Northern Europe is of very recent growth; and we look in vain along the region of the great lakes of the American continent, or in its wide North-west, for proofs of any more advanced arts than those of the miners who first explored the copper regions of Lake Superior. It requires some considerable progress in civilisation to enable the natives of northern climates so to cope with their inclement seasons, as to command a residue of time for other than works of vital necessity; while in the south nature spontaneously gratifies so many wants, that the leisure required for the development of ornamental art and ingenious refinements of taste is at the command of the first gifted race that enters into possession of its abundant supplies.

We find, accordingly, as we turn towards the south, that the pottery wrought by the tribes on the Gulf of Florida exhibits greater skill than can be traced in the best products of native kilns on the upper waters of the Mississippi, or along the shores of the Canadian lakes. Much care appears to have been exercised in preparing the clay to resist the action of fire, by mingling it with finely pounded quartz and shells. The shapes of vessels are also more fanciful, and both in workmanship and style of ornament they manifest a decided superiority. Many of these vessels were made of large size, and in constructing them a mould

of basket-work appears to have been sometimes used, which perished in the kiln, leaving the burnt clay impressed with ornamental patterns wrought in the osier frame. The smaller vessels were moulded over gourds and other natural objects, and frequently decorated with graceful patterns wrought in relief, or painted. Nevertheless, between such products of southern and northern kilns, there is not any more essential difference than that which a slight progress in civilisation, added to the greater leisure consequent on a more genial climate and productive soil, would educe; and their chief value consists in the proofs they afford of a capacity for art inherent in the Red Indian. Fig. 87 illustrates some of the varied types, selected from an unusually



FIG. 87.—Mississippi Mound Pottery.

fine collection of pottery, recovered by Mr. W. M. Anderson from mounds near Lake Washington, Mississippi. The forms exhibit considerable diversity, adapted to the varied uses of bottles, jars, bowls, and pots; and the linear ornamentation, though rude, is tasteful. Nevertheless they are only an improvement on the ruder art of the Northern tribes; and suggest no analogy to the finer ware of the Ohio mounds, or the ingenious devices of Peruvian pottery.

Of the ceramic art of the Mound-Builders we possess as yet very limited knowledge. Unlike the durable sculptures in porphyry and limestone rescued from the ashes on their altar-hearths, the fragile pottery, though even less susceptible of the action of fire, is recovered with difficulty, even

from the mounds in which it may have lain entire through unnumbered ages, until the invading axe or spade which brought it to light involved its destruction. But a sufficient number of examples have been obtained to prove their superiority in workmanship, and essential diversity in character and style of ornament from any known products of Indian manufacture. Two of the remarkable sacrificial mounds of "Mound City" contained considerable remains of pottery, though unfortunately only a few perfect vessels could be reconstructed out of the fragments. Pieces enough to have composed about a dozen vessels were found in one mound, from which two vases were restored; and alongside of them lay two chisels or graving tools of copper, a number of tubes of the same metal, an arrow-head of obsidian, and numerous spear-heads skilfully chipped out of quartz and manganese garnet. But the whole deposit was closely intermixed with charcoal and ashes, and had been subjected to a strong heat, which had broken up or changed every object liable to be affected by fire. The ornamental devices on the specimens of mound pottery thus recovered include scroll and linear patterns, birds and flowers, all of which are wrought by the hand with modelling tools on the soft clay, the design being thrown into relief by sinking the surrounding surface and working it into a different texture. The figures are executed in a free, bold style; and where the same device is repeated, sufficient variations are traceable to show that the artist modelled each design separately, guided by the eye and the experienced hand. Other vases of a coarser texture may have been culinary vessels made with a special view to their capability of withstanding fire. The important feature, however, is that both differ essentially, alike in design and workmanship, from any known class of Indian pottery.

The largest specimen of the mound pottery hitherto recovered was found in fragments on one of the altars, along with a few shell and pearl beads, convex copper disks, and

a large deposit of fine ashes unmixed with charcoal. But besides these, a more precious sacrifice had been made : unless, contrary to all analogies in mounds of this class, it is supposed to be sepulchral instead of sacrificial. A layer of silvery mica sheets, overlapping each other, covered the entire basin of the altar ; and immediately over this lay a heap of burnt human bones, apparently sufficient to have formed a single skeleton : repeating the suggestion which other evidence supplies, that the artistic skill of the Mound-Builders may not have been incompatible with hideous rites akin to those of Mexican worship.

It has been generally assumed that the ancient and widely diffused lathe or wheel of the potter remained totally unknown to the most civilised nations of the New World ; and Mr. Squier has expressed his opinion very decidedly against the knowledge of it by the ingenious Mound-Builders. It may be doubted, however, if we are yet in possession of a sufficient number of specimens of their fictile ware to determine this question. The example referred to is highly polished, and finished both within and without with a uniformity of thickness, not exceeding one-sixth of an inch, and with a smoothness of surface equalling the most perfect productions of the modern kiln. We must not, indeed, confound with the idea of the ancient potter's use of some process for giving a revolving motion to the mass of clay, while modelling it with his simple tools, his mastery of all the latest refinements of the wheel and the lathe. But the characteristics of the few specimens of mound-pottery already recovered, if confirmed by further discoveries, would go far to prove that he had devised for himself some mechanical appliance involving the most essential elements of the potter's wheel.

Among the Peruvians, who carried the potter's art to a high degree of excellence, the elaborate and whimsical devices in which they so freely indulged required the skill of the modeller and the moulder chiefly. A few curious

terra-cottas recovered from the mounds, have suggested comparisons with relics of the same class found so abundantly on ancient Mexican sites; but the remarkable specimen of pottery figured here (Fig. 88), betrays unmistakable affinities to Peruvian examples; and yet shows such a degree of rudeness as accords with the idea of its being the product of a native potter of the extinct northern race. At



Fig. 88.—Mound Pottery, Big Bone Bank.

Big Bone Bank, near New Haven, Illinois, there is a line of mounds along the banks of the Wabash river, which it washes and cuts into at every flood; and this curious piece of pottery was disclosed in this way, along with other ancient remains. It is now the property of Mr. Charles Carneal, of Cincinnati.

Thus far, then, we perceive that throughout the vast region of the New World, lying between the Atlantic seaboard and the Rocky Mountains, and bounded north and southward by the great lakes and the Gulf of Florida, certain common characteristics pertain to the fictile ware of the aboriginal tribes during the period subsequent to

European discovery. Among the southern tribes, indeed, the potter's art was brought to greater perfection, and an ingenious fancy was employed in diversifying its forms and multiplying its decorations; so that curious specimens of their workmanship are found, bearing little resemblance to the common fictile ware of the northern and western Indians. Adair says of the Choctaws and Natchez, that "they made a prodigious number of vessels of pottery, of such variety of forms as would be tedious to describe, and impossible to name;" and De Soto refers to the fine earthenware of the latter tribe as little inferior to that of Portugal. Nevertheless, the prevailing forms of the Choctaw and Natchez pottery present unmistakable affinities to that of the North, and the same may be affirmed even of the fine-painted vessels of the Zuñians of New Mexico.

But it is not so with the fictile ware recovered from the mounds of the Scioto Valley. In the very centre of the region, which thus appears to have been occupied throughout all known centuries by homogeneous tribes, corresponding in many customs and simple arts, we find the traces of a people of unknown antiquity, essentially differing from all the modern occupants of the Mississippi Valley. Though very partially advanced in civilisation, they have left evidences of skill and acquired knowledge greatly beyond any possessed by the forest tribes; and we must turn to the seats of native American civilisation for a parallel to those strange, extinct communities, that reared their lofty memorial mounds on the river terraces of the Ohio, and wrought their mysterious geometric problems in the gigantic earthworks of High Bank and Newark.

The materials for illustrating the intellectual characteristics of the civilised nations of America, have as yet been gathered only in the most partial and insufficient manner. The celebrated Mexican collection of Mr. William Bullock would have gone far towards the completion of one impor-

tant section of the requisite historical illustrations ; but after being exhibited both in America and Europe, it was allowed to be dispersed and lost. The valuable materials recovered by the joint labours of Stephens and Catherwood from the sites of a more matured civilisation in Central America, perished by a worse fate even than the auctioneer's hammer ; and those accumulated with no less industry and zeal by Messrs. Squier and Davis have been transferred to an English museum. No American collection has yet been formed adequate to the requirements of native archæology and ethnology. But interesting materials are in process of accumulation by the Smithsonian Institution ; and the Peabody Museum has already laid the foundation of a valuable



FIG. 58.—Mexican Terra-Cotta.

native collection. But though adequate materials are still wanting for the mastery of a subject alike comprehensive and important, there is sufficient evidence to furnish some exceedingly valuable data. In the British Museum, a collection of Mexican and Peruvian pottery, statuettes, and reliefs in terra-cotta, supplies interesting examples of the indigenous ante-Columbian art of America ; one of the halls of the Louvre contains a valuable cabinet of American antiquities ; the museum of the Society of Antiquaries of Scotland includes specimens of the miniature terra-cottas of Mexico, so interesting from the illustrations they afford of the costume and features of the people by whom these ingenious works of art were modelled ; and the collections of Copenhagen, Vienna, Brussels, and other European capi-

tals, are rich in similar examples of American art. The Egyptian-looking head figured here, from one of the terracottas in the Edinburgh Museum, is selected as an illustration of one of the most common head-dresses, as well as of features perpetuated by them, so little resembling those of the modern Mexican or American Indian. One important collection, chiefly of Mexican antiquities, formed by the zeal and liberality of two individuals, is now preserved in the rooms of the American Philosophical Society at Philadelphia. It contains nearly two thousand objects, including numerous terra-cottas, specimens of pottery, and works wrought in stone and metal. These were collected by the Hon. J. R. Poinsett during a diplomatic residence of five years in Mexico, and by Mr. W. H. Keating; and were variously obtained within the area of the ancient city of Mexico, on the plains near the pyramids of St. Juan Teotihuacan, Cholula, and Tezeuco, the island of Sacrificios, and from the western side of the Sierra Madre of the Cordilleras.¹ It is impossible, indeed, to examine this interesting collection with any minuteness, without being convinced that it includes the artistic productions of diverse races, and probably of widely different periods. A few specimens, indeed, are unquestionably of Peruvian origin. Others correspond to the peculiar art of Central America, as distinguished from that of Mexico. But it is probable that this distinction is one of periods rather than of locality: the arts of Central America having also been common to the Mexican plateau in that period to which so many of its traditions seem to point, when a higher native civilisation flourished there, prior to the intrusion of the Aztecs. A Mexican skull of large and massive proportions, with a full, broad, but retreating forehead, and a predominance in the longitudinal diameter, conflicting with the assigned proportions of the typical American cranium, is engraved in Dr. Morton's *Crania Americana*, plate xvi. He remarks of it: "This is a relic of the genuine Toltec stock, having been

¹ *Transactions of the American Philosophical Society, N.S.*, vol. iii. p. 516.

exhumed from an ancient cemetery at Cerro de Quesilaa, near the city of Mexico, by the Hon. J. R. Poinsett, and by him presented to the Academy of Natural Sciences of Philadelphia. It was accompanied by numerous antique vessels, weapons, etc., indicating a person of distinction." This no doubt affords a clew to one of the localities from whence the Mexican antiquities were recovered; and probably points to some of those which, from their correspondence to the higher art of America, suggested the idea of a Toltecan origin. To the same period of earlier and purer art, should probably be ascribed a fragment of bright red pottery (Fig. 90), wrought with one of the most familiar varieties of the classic frette; and which, if found on any European site among fragments of Samian ware, would be unhesitatingly



FIG. 90.—Mexican Frette.

assigned to a Roman origin. Such, however, is no solitary example of the repetition of classic and other ancient patterns, in the ornamentation employed by the native artists of ante-Columbian America. Alike in the works of the Peruvian modeller and sculptor we find evidences of their adoption of ornaments familiar to the artists of Etruria, Greece, and Rome. To the ethnologist, this independent evolution of the like forms and devices among nations separated equally by time and space, is replete with an interest of a far higher kind than any that could result from tracing them to some assumed intercourse between such diverse nations. They are evidences of an intellectual unity, far more important in its comprehensive bearings

than anything that could result from assumed Phœnician, Hellenic, or Scandinavian migrations to the New World. But while such is the conclusion forced on the mind when required to account for these recurring coincidences, it is otherwise when we find the ornamentation of Peruvian pottery reproduced as a prominent feature in the architectural decorations of Central America and Yucatan. The same argument might indeed satisfy the mind in reference to the frette ornament, wrought in its simplest ancient form, but on a gigantic scale, as the principal decoration of the beautifully proportioned gateway of Labná, or on the Casa



FIG. 91.—Black Pottery, Berue.

del Gobernador at Uxmal; but there is a variety of frette common to the ceramic art of Peru and the sculptured decorations of Yucatan, the correspondence of which is at least worthy of note. It is shown on one of the specimens of black Peruvian pottery brought from Berue (Fig. 91), with a monkey as the peculiar feature of the vessel, where a step-like form occurs in the first line of the frette. The same ornament plays a prominent part in the ruins of Mitla,¹ and again appears in Mr. Catherwood's drawings of the fine

¹ Brantz Meyer's *Mexican History and Archaeology*, plate ii.

doorway at Chunhuhu, where it is introduced on a scale that specially attracted the notice of Mr. Stephens, from the bold and striking aspect of its details.

The plastic art is valuable, alike on account of the facility with which it reproduces the costly decorations of the sculptor; and from its perpetuation of many minute indices of style and modes of thought which lie entirely beyond the compass of architecture, in its ambitious adaptations to the sanctities of religion or the majesty of the state. To those who have watched a skilful modeller tracing his ideas almost as rapidly in the plastic clay as when sketching with the pencil, it is scarcely necessary to recall with what seeming ease thought is directly translated into expressive form. All the difficulties of perspective, colour, and light and shade, which perplex the inexperienced draughtsman, are unconsciously solved in the first process; and to this, no doubt, is due the precedence which the sculptor's art takes of all others. Among the Mexicans, modelling in clay appears to have been extensively practised: and numerous terra-cotta idols, statuettes, models of animals and other objects, recovered from the ancient canals of Mexico, may be ascribed, with little hesitation, to the period of the Conquest. Considerable freedom is manifest in the modelling, but as works of art they claim no high rank; and in the contrast they present to the best fictile art and sculpture of Central America or Peru, they may be accepted as the truest exponents of the inferior civilisation assigned both by tradition and history to the Aztec conquerors of older nations of the Mexican plateau.

But the modeller's art acquires its highest value when it furnishes representations of the human face and figure. In the vicinity of some of the ancient *teocallis*, and on other sacred sites, small terra-cottas, chiefly representing heads of men and animals, abound. Collections of such brought from Mexico, and preserved in various public museums, as in that of the American Philosophical Society at Philadelphia, where they number about one thousand, illustrate artificial

malformations of the human head, national features, and a great variety of head-dresses and ornaments for the hair. Dr. E. H. Davis, of New York, has in his collection a small Mexican terra-cotta, exhibiting the head under the process of compression, nearly in the same manner as is still practised by tribes of the North-west. But besides such small terra-cottas, which would require a volume devoted specially to them fully to illustrate their interesting details, the collections of the American Philosophical Society include a series of large clay masks of the human face, twenty-eight in all, and varying in dimensions from about half life-size to somewhat larger than life. These are executed with much freedom and very considerable artistic skill, and are in a totally different style from the inferior Mexican terra-cottas already referred to. They exhibit great variety of expression; and not only manifest a mastery of the details of individual portraiture, but include caricatures modelled with equal life and spirit. Few objects of art could present features of higher interest to the ethnologist. Mr. Francis Pulszky, in his *Iconographic Researches*, when commenting on the art of American nations, remarks of his selected Mexican illustrations: "All of them are characterised by the peculiar features of the Central American group of the Red man in the formation of the skull, as well as by their high cheek bones."¹ But no such conclusion is suggested by the group of masks now referred to. The cheek bones are moderately developed, the nose is prominent and generally sharp, and a small mouth is accompanied in most cases, by a narrow projecting chin. The example figured above (Fig. 92) illustrates the character of

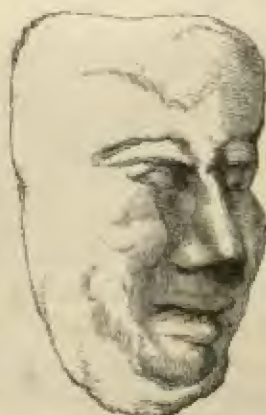


FIG. 92. — Mexican Clay Mask.

¹ *Indigenous Races of the Earth*, p. 183.

those large clay masks, or modellings of the human features, in which the ethnologist will look in vain for the Indian physiognomy. Nor are the caricatures less interesting or useful in this respect. When the English Wellington figured in the comic pages of the Paris *Charivari*, or the Emperor Napoleon III. received the like honours from the caricaturists of the London *Punch*, the humour of the satiric pencil found vent in exaggerations of the familiar natural features; and such is the tendency of all caricatures. But, as is obvious from specimens figured here (Figs. 93, 94),



FIGS. 93, 94.—Comic Mexican Masks

the ancient satirical modeller sported with features in no degree corresponding to the familiar type of the North American Indian. The varied forms of Mexican pottery more frequently exhibit an ingenious fertility of invention, and an exuberant fancy, than much æsthetic refinement. Indeed I cannot imagine the large human masks in the collection of the American Philosophical Society to be the work of the same people as the small terra-cottas beside them, which correspond in style to the Mexican drawings, rendered familiar by Lord Kingsborough's great work. But in this, as in some other departments of the subject,

it would require a special monograph to illustrate all the varied details.

It is manifest from what has already been adduced, that the native artists of Mexico, Peru, and Central America, worked the plastic clay with a skill which finds no analogy in the most elaborate productions of the modern Indian potter. So inexhaustible, indeed, was the inventive fancy of the Peruvian potters, that their art is richer in detail than all else pertaining to that remarkable people. But in Yucatan, and throughout Central America, specimens of fictile art are rare; and their civilisation asserts itself more impressively by means of colossal statues, and temples adorned with sculptured façades and graven hieroglyphs altogether unique. But enough has been noted to prove how entirely the arts of the Red Indian are left behind when we proceed to explore the sepulchral and other depositories of Yucatan, Chiapas, or Central America. Not only is the pottery of finer material, but alike in form and ornamentation it essentially differs from anything hitherto discovered to the north of the Rio Grande; and reveals the same style of thought which finds more ample expression in their mighty ruins. Among the illustrations of Mr. Stephens' *Travels in Central America*, one of the plates is devoted to pottery dug up by him in a mound among the ruins of Guezaltenango, in the ancient kingdom of Quiché. Of those the tripod illustrates a form of vessel found under considerable variations of detail as far south as the Gulf of Panama, while its ornamentation presents a resemblance to patterns of constant occurrence on the pottery of Peru. But a higher interest attaches to the specimen already referred to, dug up amid the ruins of Ticul, an aboriginal city of Yucatan. "The vase," says Mr. Stephens, "is of admirable workmanship, and realises the account given by Herrera of the markets at the Mexican city of Tlasecala. There were goldsmiths, feathermen, barbers, baths, and as good earthenware as in Spain." The chief device, as previously shown in Fig. 75, is a human bust,

corresponding in features, attitude, and costume, to the sculptured and stuccoed figures observed at Palenque and elsewhere. But still more interesting, even than the potter's reproduction of the sculptures of Palenque, is a border of hieroglyphics, running continuously with the feathered plumes of the human figure round the top of the vase, as shown here in Fig. 95, which indubitably connects it with America's most advanced era of intellectual progress.

In Central America, and not in Mexico, lay the ancient seats of highest civilisation on the northern continent; and



FIG. 95.—Third Hieroglyphic Vase.

from thence the receding lines of its influence may be traced, with diminishing force, towards the northern borders of Mexico on the one hand, and the Isthmus of Panama on the other. In all those regions numerous examples of the modeller's and potter's art have been found, proving the skill with which they wrought the plastic clay; and the novel, and even grotesque purposes to which their art was at times applied. Among the variety of uses to which it was directed, one of the most singular was that of making musical instruments. But in this, as in so much else, they had been preceded by more ancient nations. In the collection of the Royal Asiatic Society of London there is a musical

pipe of baked clay recovered from the ruins of Babylon. It is in perfect condition ; and produces its full compass of notes as clearly as it did upwards of two thousand years ago, when arts akin to those of ancient Mexico were still practised on the banks of the Euphrates. Among the more recent additions to the Peabody Museum is an earthenware whistle in the form of a cat, brought with other pieces of pottery from Central America. Several earthenware flutes, flageolets, and other wind instruments, are included in the collection at Philadelphia, suggesting in more than one instance a remarkable correspondence to the ancient Babylonian pipe ; and in recent years some curious specimens of the same class have been brought to light, along with a variety of other interesting antiquities, in exploring the ancient graves of the province of Chiriqui, about fifty miles north of Panama. These discoveries have largely added to our knowledge of the arts of its ancient population. In a communication by Dr. J. King Merrit to the American Ethnological Society, embodying the results of personal observation, he remarks that, while golden ornaments were only met with occasionally, earthenware was encountered more or less in every grave ; and he thus proceeds : "The specimens of pottery found associated with the gold figures are generally larger and of a finer quality than in the other humals. To the antiquarian these possess a great interest, as they afford some idea of the domestic habits, and the degree of civilisation attained by that ancient people, of whose history we as yet know nothing. The specimens which I have seen, and a few that I have brought from Chiriqui, exhibit a high degree of advancement in the most difficult art of pottery : forms as symmetrical and graceful as any of classic or modern dates. The glazing and painting of some are in a wonderful state of preservation, the colours being bright and distinct, and many are entirely unaffected by the lapse of time."¹ Specimens of the Chiriqui pottery in the cabinet

¹ *Report on the Humals of Chiriqui*, by J. King Merrit, M.D., p. 7.

of the Historical Society of New York, and in the private collection of Dr. E. H. Davis, furnish evidence of skill in the potter's art very far in advance of the work of the northern Indians, and exhibit forms and patterns essentially different. Many of the vessels are tripods, and these frequently have moveable clay pellets inserted in the hollow legs. The musical instruments of the class already referred to are wrought in clay in a variety of forms, but chiefly in those of birds and animals. A collection of these wind instruments, derived from various sources, has been reported on by a committee of the American Ethnological Society appointed for that purpose. They were nearly all whistles or flageolets, in the form of birds or beasts, from one and a half to four and a half inches in diameter. The most perfect



FIG. 96.—Chiriqui Musical Instrument.

instrument has three finger-holes to produce the notes A, G, F, E, downwards. A fourth finger-hole gives the semitones of these notes; and by a particular process two or three lower notes are obtained. In one of the smaller instruments, a loose ball of baked clay within the air-chamber gives further variety to the notes. The most perfect of those musical instruments are simple; and, if they were the highest efforts of their ingenious manufacturers, do not necessarily imply any great mastery of the science of music. They bear, however, no resemblance to the rude drums and medicine rattles of the forest tribes; and indicate in all respects considerable advancement beyond their highest

attainments. The example here given (Fig. 96), drawn from the original, in the possession of Dr. E. H. Davis, furnishes a fair illustration of this primitive class of wind instruments. It is painted in red and black on a cream-coloured ground, and measures nearly five inches in length. Other musical instruments both of the Isthmus and of Mexico, are simpler in form, but with a greater number of notes; while some of those found in the Chiriqui graves are little more than whistles, and may possibly have been mere children's toys. It cannot fail to be noticed, however, that their prevailing forms show the same tendency towards imitative art as the pottery and works in metal. Vases, and earthenware vessels of every kind, have been modelled in imitation of vegetables, fruits, and shells of the locality, and decorated with devices copied from the native fauna and other familiar natural objects. In this respect their works disclose characteristics akin to those found to pervade all the phases of incipient civilisation in the New World; but which are nowhere more strikingly manifested than in that remarkable country which still reveals so many traces of its arrested civilisation among the terraced steepes of the Cordilleras, where they look forth on the Pacific Ocean within the tropics, and southward to the 37th degree of latitude.

The intellectual characteristics which Peruvian art illustrates, originated fully as much in the social and political aspects of the national life, as in any original bent of the native artists. The historian of the Conquest has remarked, with acute discrimination, that "the character of the Peruvian mind led to imitation rather than invention, to delicacy and minuteness of finish rather than to boldness or beauty of design;"¹ and it may be said as justly of the specimens of their ceramic art, as of other products of their mechanical skill and artistic design, that they were frequently made on a whimsical pattern, evincing quite as much ingenuity

¹ Prescott's *Conquest of Peru*, b. i. ch. v.

as taste or inventive talent. We discern in the architecture and sculpture, as well as in much else that pertained to ancient Egypt, individual action controlled in its formative expressions of thought by the prescribed formulæ of national creed and policy; while Hellenic art and genius reflect the expansive freedom of the emancipated human mind. The architecture of Peru, with its attendant arts, no less clearly betrays the influences of its singular polity and the unconscious restraints of national formulæ of thought; and we must give full value to such repressive elements before attempting to gauge the inventive originality of Peruvian genius. Contrasted with the repetition of a few simple forms in the pottery of the Indian tribes of North America, the ceramic art of Peru illustrates an essentially different mental development. Some of the specimens are purposely grotesque, and by no means devoid of true comic fancy; while the endless variety of combinations of animate and inanimate forms ingeniously rendered subservient to the requirements of utility, exhibits a lively perceptive faculty which we look for in vain among any other people of the New World. Vessels for common domestic use were made in the most convenient forms, and were so well executed, that Dr. Tschudi speaks of many antique pitchers and large earthen jars still in daily use, and generally preferred for their durability to those of the modern potter. But in vessels for the festive board an unrestrained exuberance of fancy and curious ingenuity seem to sport with the pliant material. The design appears to have been first modelled in clay, and then the more elaborate vases were made in several pieces from moulds. Such a process allowed the utmost latitude to the potter's ingenuity. An ancient Peruvian vessel in the collection of the New York Historical Society (one of the group in Fig. 97), both in design and general style, suggests comparison with the ruder pottery of the Mound-Builders on the Wabash, as shown in Fig. 87. It represents a woman with a large jar at her back, held by a

broad strap passing across her forehead, much in the same manner as the Scottish fishwife still carries her creel. The same collection includes nearly a hundred vessels of different sizes and great variety of forms. Some are double: in this respect repeating, with considerable similarity, the *bijugué* or twin-bottle of the ancient Egyptians;¹ others embrace groups of four, six, or even eight vessels combined in one, and generally with a double spout, which also constitutes a characteristic feature of the water-pitcher called the "monkey," still in universal use in Brazil. A few are of simple and graceful forms, and others are modelled from melons, gourds and other fruit, though generally with a grotesque animal-head added as the mouth of the vessel. The remainder include imita-



FIG. 97.—Peruvian Pottery.

tions of the duck, parrot, pelican, turkey, land turtle, monkey, lynx, otter, llama, toad, cayman, shark, etc., arranged with endless diversity, to modify the form of the bottle, jar, or pitcher; or are painted and adorned with figures or ornamental patterns in relief.²

The ingenuity of the Peruvian potter was further employed in whimsical applications of acoustics to the more complicated specimens of his skill. This has been illustrated by Dr. Tschudi, from the abundant means within reach of an observer resident in the country. "All the moulded

¹ Vide Marryat's *History of Pottery*, 2d edit., fig. 190, and also a Chinese porcelain double-bottle, fig. 129.

² The tripod in the group, Fig. 97, is from Panama; all the others are Peruvian.

works of the ancient Peruvians," he observes, "have a peculiar character, which distinguishes them from those of the other American nations: a character which, by those versed in antiquities, will be recognised at first sight;" and he adds of the double vessels: "They were made in such perfection, that when they were filled with a liquid, the air, escaping through the opening left for that purpose, produced sounds at times very musical: these sounds sometimes imitated the voice of the animal which was represented by the principal part of the vessel: as in a beautiful specimen we have seen, which represents a cat, and which, upon receiving water through the upper opening, produces a sound similar to the mewling of that animal. We have in our possession a vessel of black clay, which perfectly imitates the whistle of the thrush, the form of which is seen on the handle. We also preserve two circular vases, which being filled with water through a hole in the bottom, on being turned over, lose not a single drop, the water coming out, when it is wished, by simply inclining the upper part of the vase."

Mr. Blake, whose notes and valuable collections have furnished interesting materials for various chapters of this work, obtained some curious specimens of the ancient potter's art from Peruvian graves. One example, measuring twenty-two inches long, is in the form of a fish, with its tail partially turned round, like a salmon in the act of leaping; and another is in that of a deer's head carrying a vase between its antlers. A third, modelled as a bird, with long legs like a crane, when filled with water, and moved gently backward and forward, emits sounds not unlike the notes of a bird, which most probably were designed to imitate the peculiar cry of the one represented. Small spherical vessels are very common, and, as Mr. Blake conceives, were designed for holding an infusion of the leaves of the *erythroxylon coca*. Similar vessels, he informs me, are still in use among the Indians; and an infusion of coca,

frequently prescribed by their medical men, is sipped from the cup through a small tube of reed or silver.

The apparent reproduction of Egyptian, Etruscan, and other antique forms in Peruvian vases, has been referred to by more than one traveller; nor does the correspondence between such arts of ancient nations of the Old and New Worlds stop here. Mr. Joseph Marryat, while referring with undue disparagement to the products of Peruvian art, remarks: "Though this pottery is generally very uncouth in form and ornament, yet in some specimens the patterns, carved or indented, represent those well known as the 'Vitruvian scroll' and 'Grecian fret.' It is curious that a people so apparently rude should have chosen ornaments similar to those adopted in the earliest Grecian age, and found on the Lantern of Demosthenes at Athens, 336 B.C.; but which, however, it appears the Greeks themselves borrowed from the Assyrians. The 'honeysuckle pattern' is found also upon the earliest known monuments of Buddhist art, and the Etruscan upon the earliest Chinese bronzes."¹ But still more striking analogies to ancient Asiatic art have recently come to light from an unexpected quarter. Among the remarkable discoveries which rewarded the researches of Dr. Schliemann on the site of Homer's Ilium, are examples of double-necked jugs; terra-cotta groups of goblets uniting in a single vessel; others terminating in human or animal heads; or modelled in such forms as the hippopotamus, horse, pig, hedgehog, and mole. One curious tripod has some resemblance to a bugle-horn. The handles and mouth-pieces are in a style of common occurrence in Peruvian pottery: and indeed few of the examples referred to would seem out of place in a collection of such ware.² The points of resemblance are too numerous to be summarily set aside as accidental. It may be that thus, through ancient Trojan, Assyrian, and Mongolian art, along

¹ Marryat's *History of Pottery and Porcelain*, p. 398.

² *Troy and its Remains*, Figs. 105, 155, 156, 159, 160, 162, 286, 287, 288, 290.

with evidence of other kinds hereafter referred to, the old footprints may be so identified as to place beyond doubt an Asiatic migration to the continent of America, in southern latitudes, and by way of the Pacific. But if so, it was at a period so remote as to allow the primitive colonists of the New World abundant time to develop specialities of their own.

The Vitruvian scroll is discernible on pottery in the collection of the Historical Society of New York, brought from Huarmachuco and Otusco; and the classic fret may be traced alike on pottery and sculptures of Central America and Peru; but they are associated with a variety of designs bearing no trace of foreign origin.

In their highest, no less than in ruder stages, the arts of the New World are manifestly of native growth; nevertheless there are specimens which challenge comparison with productions of classic art, not because of any indications of a common origin; but on the far higher ground of equality in artistic design. Some of these combine a grace and beauty of form which amply demonstrate the capacity of their executors for higher attainments. Prescott indeed remarks of two terra-cotta helmeted busts found at Oaxaca: "They might well pass for Greek, both in the style of the heads and the casques that cover them."¹ The same might be said with nearly equal truth of an ancient vase of the Quichuas of Bolivia, introduced in the group, Fig. 99; and also of a gracefully-modelled pendant vase, beautifully painted in patterns executed in red, yellow, and dark brown, which is engraved in D'Orbigny's *L'Homme Américain*, along with other characteristic specimens of the pottery of Bolivia and Peru.²

But the most valuable examples of the ceramic art of Southern America, are those which illustrate the physio-

¹ *Antiquités Mexicaines*, t. iii.; *Exp.* ii. pl. 36; Prescott's *Mexico*, App. part i.

² *L'Homme Américain*, plates v. xiv.

gnomy of its ancient population. By means of cranial and other physiological evidence, it has been maintained that the type of red man of the New World, from the Arctic circle to the Straits of Magellan, is so slightly varied, that "all the Indians constitute but one race, from one end of the continent to the other."¹ The cranial evidence will be considered in a subsequent chapter. But here, meanwhile, by means of ingenious portraiture executed by the Peruvian potter, we find in the sepulchre, alongside of the fleshless skull, the sacred urn, which preserves for us the living



FIG. 98. — Peruvian Drinking Vessel.

features, the costume, and the familiar habits of the dead; and these features are neither those of the forest Indian, nor of the semi-civilised Mexican, but national features, as replete with a character of their own, as the fictile ware which supplies such valuable illustrations of the generations of an ancient and unknown past. One of those Peruvian drinking-vessels, of unusual beauty, from the Beckford Collection (Fig. 98), is placed by Mr. Marryat alongside of

¹ *Indigenous Races of the Earth*, p. 14.

a beautiful Greek vessel of similar design, from the Museo Borbonico, Naples, without greatly suffering by the comparison. In this Peruvian vessel, there is an individuality of character in the head at once suggestive of portraiture, and of the perfection to which the imitative arts had been carried by the ancient workmen, in the modelling perchance of some favourite Inca prince, or noble. Another graceful portrait-vase, from Cuzco, in the collection of Dr. Archibald Smith, of Edinburgh, represents the human head surrounded by ears of maize modelled with minute verisimilitude. A selection of this class of vases grouped together in Fig 99 illustrates a diversity of physiognomy in which we look in vain for the characteristic Indian countenance, with its high



FIG. 99. — Portrait Vases.

cheek-bones, its peculiar form of mouth, and strongly-marked nose. The group, ranging from left to right, includes a small Mexican vase of unglazed red ware, in the collection of the American Philosophical Society; an ancient portrait-vase of the Quichuas of Bolivia, from D'Orbigny's *L'Homme Américain*; and another in the cabinet of the Historical Society of New York, from Berue, representing apparently a female with a close-fitting cap, and the hair gathered up under it behind. The next, from the collection of Dr. E. H. Davis, is a Peruvian drinking-vessel, with crested helmet or head-dress, and ear-pendants such as are frequently introduced in the small Mexican

terra-cottas ; and the vase on the right hand, brought by Colonel Thorpe from Mexico, includes a group of comic masks designed with great spirit.

Grotesque and humorous designs are by no means rare. One example, figured by D'Orbigny, is a pitcher in which, though the face is human, the limbs are those of the quadrumanous ape. A water bottle in my own possession, nearly of the same design as one already shown in Fig. 91, from Berue, with the ape as its most prominent feature, was found under the right arm of a mummy in an ancient grave at Arica. The monkey indeed was familiar to the native artist, and is a frequent subject both of the sculptor's and potter's art. At Copan, Stephens was first rewarded with a glimpse of architectural remains which clearly told of extinct arts and an obliterated civilisation of native growth, and awoke in his mind an interest stronger than he had felt when wandering among the ruins of Egypt, or exploring the strange architecture of the long-lost Petra. Following his Indian guide with hope rather than expectation of finding remains of a higher character than the combined labours of the forest-tribes were capable of producing, he suddenly found himself arrested amid the dense forest by a squared stone column about fourteen feet high, sculptured in bold relief on every side. "The front," he says, "was the figure of a man curiously and richly dressed : and the face, evidently a portrait, solemn, stern, and well fitted to excite terror." In this, as in all the portrait-sculptures carefully drawn by Catherwood in Central America and Yucatan, we look in vain for the Indian features, which, according to the deductions of the native school of American ethnologists, ought to be found as surely in such ancient portraits, as the universal type of American cranium is affirmed by Morton to be disclosed by every open grave. But by whatever race such ancient sculptures were wrought, they place certain truths of the past beyond doubt or cavil. "The sight of this unexpected monument put at rest at

once and for ever, in our minds, all uncertainty in regard to the character of American antiquities ; and gave us the assurance that the objects we were in search of were interesting, not only as the remains of an unknown people, but as works of art, proving, like newly discovered historical records, that the people who once occupied the continent of America were not savages." Searching amid the forest-glades, other sculptured statues lay broken or half-buried in the luxurious vegetation ; and one stood "with its altar before it, in a grove of trees, which grew around seemingly to shade and shroud it as a sacred thing. In the solemn stillness of the woods, it seemed a divinity mourning over a fallen people. The only sounds that disturbed the quiet of this buried city, were the noise of monkeys moving among the tops of the trees, and the cracking of dry branches broken by their weight. They moved over our heads in long and swift processions, forty or fifty at a time, some with little ones wound in their long arms, walking out to the end of boughs, and, holding on with their hind feet or a curl of the tail, sprang to a branch of the next tree, and, with a noise like a current of wind, passed on into the depths of the forest. It was the first time we had seen those mockeries of humanity, and, with the strange monuments around us, they seemed like wandering spirits of the departed race guarding the ruins of their former habitations."¹

Such is a glimpse of some of the teachings embodied in the art of the New World. It reveals a very striking diversity among the products of different localities and widely-separated areas ; discloses to us some of the customs, the personal characteristics, and even the intellectual attributes of long-extinct generations ; and furnishes an important gauge of native American civilisation. Mexican and Peruvian arts have been studied chiefly from the glowing pages of Spanish chroniclers ; and among these their pot-

¹ Stephens' *Travels in Central America*, vol. i. ch. v.

tery is frequently described as equal to the best of Spanish manufacture.¹ It is admittedly doubtful whether among either people any approximation to the potter's wheel had been made. The more elaborate and complicated designs illustrate the modeller's, rather than the potter's dexterity and skill; and scarcely admitted of the useful application of the lathe or wheel. But their ingenious devices, and endless varieties of form, were well calculated to impress the conquerors with the evidence of native culture and inventive power. In examining broken specimens of their pottery, it is seen that the more complicated designs were formed in pieces, and wrought in moulds. In general it is imperfectly baked, and inferior in strength either to the ancient or modern pottery of Europe. A semi-barbarous element is also apparent in the frequent sacrifice of convenience and utility to grotesqueness of form, or an ingenious trifling with the simplest laws of acoustics. Such characteristics may suggest doubts as to the literal accuracy of early Spanish writers in some of their descriptions of native industrial and ornate arts. Nevertheless, the contrast between the rude pottery made by the Indians of the North-west, or the most perfect specimens of clay images and terra-cottas of Georgia, Florida, or other southern States, and those which are found in ancient sepulchres of Mexico, Central America, and Peru, truly illustrates the wide difference between the nomads of the northern forest and the nations under the influence of Aztec and Inca rule.

¹ *Relation Sig. de Cortez ap. Lorenzana*, c. 58.

CHAPTER XVIII.

LETTERS.

THE PERUVIAN QUIPU—ORIGIN OF LETTERS—IDEOGRAPHIC SYMBOLS—PRIMITIVE CHRONICLES—GERMS OF WRITTEN LANGUAGE—THE INDIAN CADMUS—A CHIP-EWA CENSUS—PICTURE-WRITING OF THE AZTECS—TOLTECAN SYSTEM—MEXICAN PHONETIC WRITING—SIGNS OF THE AZTEC YEAR—SYSTEM OF NOTATION—PALEOQUE HIEROGLYPHICS—ABBREVIATED CHARACTERS—POLYSYNTHETIC WRITING—MANUSCRIPTS OF THE CACIQUES—ANTICIPATIONS OF FUTURE DISCOVERIES—CHINESE WRITTEN CHARACTERS—THE DRESDEN CODEX—SYSTEM OF QUIPU RECORDS—QUIPUS AND WAMPUM—PERUVIAN SYMBOLIC PAINTING—INDIAN WAMPUM—THE WAMEANOAG WAMPUM-BELTS—THE WAMPUM OF THE IROQUOIS—KEEPER OF THE WAMPUM—WAMPUM MOUND-RECORDS.

IN comparing the very diverse characters of Mexican and Peruvian civilisation, we are equally struck with the parallels and the contrasts which they illustrate in the progress of man towards intellectual life and light. But in one respect the civilisation of the southern continent, as illustrated by its *quipus*—with all the help of amautas, or chroniclers of history, annalists, and quipucamayocs, or accountants and registrars,—must be regarded as immeasurably inferior to that hieroglyphic system which tantalises the student of American antiquities by its suggestive mysteries, amid the sculptured ruins of Central America. Compared even to the picture-writing of the Aztecs, the Peruvian system of mnemonics exhibits a method of preserving and communicating information singularly devoid of the intellectual characteristics which pertain to every other device of civilisation for a nation's chronicles. It was essentially arbitrary; dependent on the memory of those

who employed and transmitted the ideas and images, which of itself it was incapable of embodying; and, above all, it had within itself no germ of higher development, like the picture-writing or sculpturing of the Egyptians, out of which grew, by natural progression, first ideography, and then the symbols of a phonetic analysis of speech: the rudiments of all higher knowledge, and the indispensable elements of intellectual progress.

It is consistent with the very nature of a highly developed written language that its origin should be preserved only in some mythic embodiment of an ideal Thoth, Cadmus, or Mercury. The discovery of letters approaches, indeed, so near to the divine gift of speech that Plutarch tells us in his *De Iside et Osiride*, when Thoth, the god of letters, first appeared on the earth, the inhabitants of Egypt had no language, but only uttered the cries of animals. They had, at least, no language with which to speak to other generations; and hence Bacon, passing, in his *Advancement of Learning*, from "that wherein man excelleth beasts" to that immortality whereunto man's nature doth aspire, exclaims:—"If the invention of the ship was thought so noble, which carrieth riches and commodities from place to place, and consociateth the most remote regions in participation of their fruits: how much more are letters to be magnified, which as ships pass through the vast seas of time, and make ages so distant to participate of the wisdom, illuminations, and inventions, the one of the other?" But it is not altogether to be ascribed to the forgetfulness by later generations of the benefactor to whom so great a gift as letters was due, that the origin of writing is obscurely symbolised in mythic impersonations. The Egyptian Thoth was in reality no deified mortal, but the impersonation of an intellectual triumph achieved by the combined labours of many generations, the successive steps of which can still be discerned. The origin of the hieroglyphics of Egypt is clearly traceable to the simplest form of picture-

writing, the literal figuring of the objects designed to be expressed. Through a natural series of progressive stages this infantile art at length developed a phonetic alphabet symbolising the sounds of the human voice. The first process was that of abbreviation, whereby a part was made to stand for the whole; a crown, for the Pharaoh, or king; the head for the whole animal, etc. The next step was that of associated ideas, or symbolism employed to express abstract terms, as the sceptre for *power*, the flowing urn for *libation*, the ringed cross, or tau, by some peculiar association, for *life*, the serpent for *eternity*, and the two combined for *immortality*. By such means the crude picture-writing became a series of ideographic symbols capable of expressing abstract thought. But it was not until the Egyptian was compelled to record on his monuments foreign names, with which he had no associated ideas, that he adopted a plan of phonetic signs, by assigning to the pictured object the value of its initial sound. Thus the tuft of a reed, *ake*, stood for A; a goat or ram, *baampe*, for B, etc. But while the name of Menes, the founder of Egyptian monarchy, is written phonetically on some of the oldest monuments, the inscription on the Rosetta stone, graven in the reign of Ptolemy Epiphanes, combines with the very partial alphabetic use of hieroglyphic signs, both picture and symbolical writing. The word *writing* or *letters* is literally figured by an ink-horn and reed; the honorary title *ever-living* by the handled cross and serpent, etc. Picture-writing was never deliberately abandoned. It only passed, undesignedly, into arbitrary signs by the process of writing on papyrus leaves instead of engraving on granite or limestone, whereby the abbreviations of a current hand tended more and more to deviate from the original sculptured symbol. To these demotic characters we owe the letters of Cadmus, the alphabets of Phœnicia, Greece, Rome, England: whereby "have not the verses of Homer continued twenty-five hundred years or more, without the loss of a

syllable or letter; during which time infinite palaces, temples, castles, cities, have been decayed and demolished?"¹

In Britain, and throughout transalpine Europe, the letters of the mythic Cadmus are of modern introduction; and the traces of a literate age of its own, which long preceded definite history, point to the independent origin of an alphabet by some wholly different process. The Northern Futhork, or Runic alphabet, which is only rivalled in simplicity by the Ogham inscriptions of Ireland, Scotland, and Wales, was common, under certain modifications, to the whole Teutonic stock, and betrays no traces of having ever been otherwise than a series of arbitrary signs. The most ancient Runic inscriptions in no degree rival the antiquity of Neotechnic art; but it is curious to trace in the dawn of Europe's post-glacial period analogous symbols in use, which—but for their undoubted execution by Troglodytes of Aquitaine, contemporaneous apparently with the mammoth and the reindeer,—might be assigned as the work of some Gaulish scribe familiar with the Ogham characters of British and Irish Celts. Among the relics of primitive art already referred to as recovered from the Dordogne caves are tallies and inscribed tablets of horn and ivory with their enumeration in simplest units. Of this class a piece of deer's horn marked with a series of cuts, or notches, as already shown in Fig. 40, is assumed by M. Broca to have been a hunter's memoranda of the produce of the chase. But a much more complex record, shown here (Fig. 100), inscribed on a plate of bone or ivory found in the rock-shelter of Gorge d'Enfer, reproduces in its groups of horizontal and oblique lines—apart from the rows of dots on the flat surface,—a record graven in such characteristic symbols, that in the absence of any evidence of the actual circumstances of its discovery, it might be assumed to be an Ogham inscription. That it is a graven record of some sort, expressed in purposely varied symbols, cannot admit of question. Lines

¹ Bacon's *Advancement of Learning*.

are disposed in groups, at right angles to the edge, or obliquely inclining both up and down, precisely as like alphabetic runes are grouped on the angle of an Ogham stone. The dots also appear to be systematically disposed in lines, with one detached group of nine dots arranged in a square of three rows. Even if this be no more than the memoranda of a successful hunt, with a record of the different kinds of game secured, it is not inferior to the Quipus of the civilised



FIG. 100.—Inscribed Tablet—Gorge d'Enfer.

Peruvians. It embodies the germs of written language little less fully than the cuneiform characters of a Babylonian cylinder; and may suggest a probable source for the Runic alphabets of Europe. Arbitrary distinctive signs associated with specific ideas, such as the different kinds of game of the Troglodyte hunters of Aquitaine, were as readily convertible into the runes of the Futhork, or of the Ogham alphabet, as the demotic characters of the Egyptian current

hand were transformable into the later alphabets of the civilised world.

When we turn from the consideration of the intellectual progress associated with the letters of Cadmus, to that other hemisphere which no ray of Grecian intellect and culture helped to illuminate, there is a charm of singular interest in the discovery that there, too, the human mind had followed on the very same path in its struggle to emerge from darkness. Longfellow, in his embodiment of the Algonquin legends, represents Hiawatha mourning that all things fade and perish, even the great traditions and achievements pass away from the memory of the old men :—

“Great men die and are forgotten.
Wise men speak ; their words of wisdom
Perish in the ears that hear them,
Do not reach the generations
That, as yet unborn, are waiting
In the great, mysterious darkness
Of the speechless days that shall be.”

And so the Indian Cadmus, with his paints of diverse colours, depicts, on the smooth birch-bark, such simple figures and symbols as are now to be found graven on hundreds of rocks throughout the North American continent ; and are in constant use by the forest Indian in chronicling his own deeds on his buffalo robe, or recording those of the deceased chief on his grave-post. This is a simple process of picture-writing, readily translatable, with nearly equal facility, into the language of every tribe. Deeds of daring against Indians or white men, are indicated by the native chronicler by means of the characteristic costume and weapons of each. Headless figures are the symbols of the dead ; scalps represent his own special victims ; and in like manner feats against the buffalo, or grizzly bear, are recorded in graphic depictions, as intelligible as any chronicle or monumental inscription of ancient or modern times. The totem of the tribe, and the name of each member of it, can be pictorially represented.

An Indian signs his name in any written transaction with white men, by sketching his adopted symbol, the eagle, bear, snake, or buffalo; the pine-tree, pumpkin, arrow, etc.: sometimes adding thereto the totem of his tribe. Mr. Schoolcraft has engraved a census of a band of Chippewa Indians in the Minnesota Territory numbering in all one hundred and eight souls, drawn up in an intelligible form, and rendered to the United States agent by their chief, Nagonabe. Each family is denoted by a picture of the object expressive of its common or current name. Some of these are simple, such as a beaver-skin, an axe, a cat-fish: others require the Indian interpreter's aid. An oval, coloured brown, with a crescent line drawn through it, represents a valley, the name of the master of the wigwam; a yellow circle, with eyes, and radiating lines, is the sun; and a human bust, with the hair in loose locks, is described as "easily recognised as the chief possessing sacerdotal authority." Added to each symbol, are a series of units, not more simple than those on the Rosetta stone, indicating the number in the family. To the Indian agent, already familiar with the band, the whole formed a census roll as intelligible as any regular enumeration in writing and Arabic numerals could have been.¹ This system of writing includes well-recognised symbols for the Great Spirit and many inferior objects of worship or superstitious reverence. The sun, the moon, lightning, rain, the earth, the sky, life and death, all have their appropriate renderings; and thus the rude Indian has developed for himself the very same means of ideographic inscription which lie at the root of the hieroglyphic and demotic writing of Egypt, with a phonetic alphabet, and all later triumphs of letters. Moreover, his whole mode of thought is carried out under a process of symbolism, readily translatable into picture-writing; and when Indians are gathered in the neighbourhood of white settlements or trading-posts every white man

¹ *History of the Indian Tribes of the United States*, vol. ii, p. 222.

receives a descriptive name, sometimes more pointedly distinctive than flattering, *e.g.*, crooked-pine, lame duck, or pumpkin-belly. Such surnames are common to all primitive people; and indeed survive in a much later stage, as is seen in those of Malcolm Canmore, William Rufus, and Edward Longshanks. It appeals to the same universal appreciation of associated ideas, out of which grew the family crests, rebuses, and canting heraldry of medieval Europe.

The picture-writing of the Aztecs, though greatly improved in execution, and simplified by many abbreviations, was the same in principle as the rude art of the northern Indians. When Cortes held his first interview with the emissaries of Montezuma, he observed one of the attendants of Teuhtlile, the chief Aztec noble, busily sketching on canvas the Spaniards, their peculiar costumes and arms, their horses and ships. The skill with which every object was delineated excited the admiration of the Spaniards; and by such means a report of all that pertained to the strange invaders of his dominions was transmitted to the Aztec sovereign. But however greatly superior this might be as a piece of art, it was manifestly no advance on the principle of Indian picture-writing: nor can we be in much doubt as to its style of execution, since Lord Kingsborough's elaborate work furnishes so many facsimiles of nearly contemporary Mexican drawings. In the majority of these, the totemic symbols, and the representations of individuals by means of their animal or other cognomens, are abundantly apparent. The figures are for the most part grotesque and monstrous, from the very necessity of giving predominance to the special feature in which the symbol is embodied. To the generation for which such were produced, the connection between the sign and the person or thing signified would be manifest. But a brief interval suffices to render symbols and abbreviations unintelligible; and within less than a century after the Conquest, De Alva could not find more than two surviving Mexicans, both very aged,

capable of interpreting this Aztec literature. It was, in truth, only a system of mnemonics, superior to the quipus of the Peruvians, but still mainly dependent on memory and an arbitrary association of ideas; and thereby suggesting to the initiated what no literal interpretation can deduce from it. Such associated ideas when once lost are for the most part irrecoverable; and it does not seem probable that the art of deciphering the picture-writings of Mexico will ever be carried much further than it has been; or indeed, that the majority of its records would be found to embody any new or important facts. Attempts have indeed been made to apply the Mexican language to its symbols in the same way that the Coptic has been used as the key to Egyptian phonetic writing. But the process is to a great extent one of self-deception. A writer in the *Foreign Quarterly Review* remarks: "The phonetic system of the Toltecan is intelligible at a first glance. The sounds intended to be conveyed by the symbols are conveyed syllabically or heraldically. The names common even to this day among the American aborigines, such as wolf, great bear, rattlesnake, etc., are represented by crests rudely fashioning the same animal form, which surmount the helmets of their warriors, and the diadems of their kings. A single instance will suffice to explain this proposition. The head of a Toltecan king appears along with two others sculptured in the pyramidal tower of Palenque. Over it is the name inscribed in an oblong phonetic rectangle, corresponding to the Egyptian cartouche. The name is Acatlapotzin. It is composed of two words; the first implying *reeds*, the other *hand*. The symbol of a *hand* therefore, and the symbol of *reeds*, convey the sounds of the name Acatla-Potzin."¹

Supposing this rendering to be correct, what does the reader conceive he has gained by it, in the absence of all known history of any Toltecan or Aztec king Acatlapotzin, that would not be equally plain if he were called King Reed-

¹ *Foreign Quarterly Review*, 1837, vol. xviii. p. 52.

band ; as we have Black Hawk, Red Jacket, and other well-known Indian chiefs ? Neither in the northern Indian, nor in the Aztec picture-writing, did the symbol or totem possess any phonetic value. The picture brought by Montezuma's scout was meant as a representation of the Spanish leader, not as symbols of the words Hernando Cortes. A *red jacket* would not only have proved an apt hieroglyphic of the famous Seneca chief's English designation, but it might have been in a certain sense called phonetic. Yet his actual name was *Sagoyewatha*, i.e. he keeps them awake : in reference to his unequalled powers as an orator. The Abbé Brasseur, who has devoted himself to Mexican historical research, has indeed satisfied himself of the existence of Mexican phonetic writing ; but it amounts only to a similar relation between certain pictorial signs and the names of some places and persons. This is no evidence of true phonetic writing. The name, indeed, may have originated in the sign. The fertile region of *Tlascala* or *Tlaxcallan*, "the place of bread," or the Tezcucan chief *Nezahualcoyotl*, "the hungry fox," might be represented by objects, which united together, according to the Mexican vocabulary, constituted a rebus of each name ; but it is a confusion of terms to call such representations phonetic signs or symbols of sounds. As civilisation advanced, however, many signs were introduced as symbols of ideas ; and hence involved the germs of a word-alphabet, like the Chinese. Thus, *footprints* denoted migration, or travelling ; a *tongue*, speaking, or life ; and a *bloody heart*, sacrifice ; but in these the very tendency of such advancement was in an opposite direction from any phonetic system. But if the Toltec and Aztec systems of writing bore any affinity to each other, the Palenque hieroglyphics referred to may be a date instead of a name. A *reed* was one of the four signs of the Aztec year, and a *bundle of reeds* the symbol of a cycle of fifty-two years, within which the calendar was rectified to true solar measurement by the addition of thirteen days.

It is in the figures thus employed in the chronology of the Aztecs that we find the highest development of their system of writing, and there the symbolic character of the signs is unmistakable. Their four symbols of the year, a *reed*, *flint*, *house*, and *rabbit*, were equivalent to the signs of the four elements. This corresponds to the system in use in the calendar of the Chinese, Japanese, and other Asiatic nations; and is recognised by Humboldt as one of the traces of an Asiatic origin of American civilisation. Again, there were twenty signs of the days, including a repetition of those of the year, in a manner that admitted of an ingenious indication of the subdivisions of months into weeks of five days, but which seems wholly incompatible with any idea of phonetic writing. The process was rather the reverse, the name of the sign being attached to the day, as in our own names for the days of the week.

The significance of the Mexican calendar in reference to the comparative antiquity of Aztec civilisation has already been pointed out. In its construction the four symbols of the year also marked the four subdivisions of the great cycle of fifty-two years: the annual portions of which were expressed by a series of dots, from one to thirteen, and beyond the first subdivision, by a change of the symbol, and a repetition of the dots associated with a second line of these simple arithmetical signs. A bundle of reeds, indicating a group of years, was the sign of the completed cycle, and in association with the year-sign, marked the half-centuries in the calendar. By such combinations a periodical series of conjunct signs sufficed for the construction of the whole chronological table with a very few symbols and numerals, employed in a manner that seems to involve the germ of that value of position by which the modern European system of arithmetic is specially distinguished.

The system of notation in the arithmetic of the Aztecs may also properly come under notice along with their writing. Like that of most nations, it was essentially decimal,

or more strictly vigesimal. The first twenty numbers were expressed by a corresponding series of dots. There were separate names for the first five, and for ten, fifteen, and twenty, the last of which had its special sign of a *flag*. Intermediate numbers were written like the Roman numerals, five and one being six, five and two seven; and in addition to those signs and combinations, four hundred, the square of twenty, was marked by a *plume*, and eight thousand, the cube of twenty, by a *purse*. The latter signs, halved or quartered, were sometimes used to indicate corresponding fractions of the sums; and by this means, imperfect as it may seem, the Mexicans were able to indicate any numerical quantity, and to work out arithmetical calculations with ease. Thus the simplest arbitrary signs sufficed for the system of notation devised by the Aztecs, with only the addition of the flag, plume, and purse: symbols, not phonetic signs; though used in designation like our own terms, a *yoke*, a *brace*, a *couple*, a *score*. They may remind us that in our more perfect system of notation we still employ a series of signs essentially unphonetic; for whether the Roman or Arabic numerals are employed, they represent the idea of number only, and are translated with equal propriety into the equivalent sounds of every language.

But America has still, beyond this, a higher system of writing, more correctly styled hieroglyphics, to which reference has been already made, in alluding to the interpretation of the sculptures of Palenque. On the sculptural tablets of Copan, Quirigua, Chichenitza, and Uxmal, as well as on the colossal statues at Copan and other ancient sites in Central America, groups of hieroglyphic devices occur, arranged in perpendicular or horizontal rows as regularly as the letters of any ancient or modern inscription. The analogies to Egyptian hieroglyphics are great, for all the figures embody more or less clearly defined representations of objects in nature or art. But the differences are

no less essential, and leave no room to doubt that, in those columns of sculptured symbols we witness the highest development to which picture-writing attained, in the progress of that indigenous American civilisation. A portion of the hieroglyphic inscription which accompanies the remarkable Palenque sculpture of a figure offering what has been assumed to represent an infant, before a cross, will best suffice to illustrate the characteristics of this form of writing. The sculpture is given by Dupaix, Lord Kingsborough, and Stephens, and has been made the subject of many extravagant theories and conjectures. Mr. Stephens vouches for the accuracy of Mr. Catherwood's drawings of the hieroglyphics both of Copan and Palenque; and of this I have satisfied myself by a comparison of them with a large sculptured slab brought from the same site, and now at Washington. Mr. Stephens adds, in describing the Palenque hieroglyphics: "There is one important fact to be noticed. They are the same as were found at Copan and Quirigua. The intermediate country is now occupied by races of Indians speaking many different languages, and entirely unintelligible to each other; but there is room for the belief that the whole of this country was once occupied by the same race, speaking the same language, or, at least, having the same written characters."¹

The impressions produced on the mind by the investigation of the few specimens yet recovered of those ancient and still unintelligible native chronicles, are of a singularly mixed kind. They furnish proofs of intellectual progress which cannot be gainsayed, while baffling us at the same time by a mystery which all our higher intellectual progress leaves unsolved. It would be presumptuous indeed to deny the possibility of some future solution of the mystery; but if such is ever found it will be by a totally different process from that which enabled Young and Champollion to solve the Egyptian riddle. In the specimen engraved here

¹ *Incidents of Travel in Central America*, vol. ii. ch. 20.

(Fig. 101), the inscription begins with a large initial symbol, extending over two lines in depth, like the illuminated initials of a medieval manuscript. It is obviously not a simple figure, but compounded of various parts, so abbreviated that their original pictorial significance is as little apparent as the meaning of the primary monosyllables in the vocabularies of living languages. The principal figure, which might be described as a shield, reappears in combination with a human profile, in the fifth line ; again, slightly modi-



FIG. 101. — Palenque Hieroglyphics.

fied, in another combination at the end of the same line ; and twice, if not three times, in the line below. The human hand in different positions, the heads of quadrupeds and birds, and some other definite objects, can be recognised, alone, or in combination with others less defined, or unfamiliar. In carefully comparing the hieroglyphic inscriptions hitherto published with the Palenque slab at Washington, the like recombinations of the several elements of

detached figures are noticeable ; while, as seen in the last line of the example given above, occasional signs, closely corresponding to alphabetic characters, occur in union with hieroglyphic groups. But, while the recurrence of the same signs, and the reconstruction of groups out of detached members of others, clearly indicate a written language, and not a mere pictorial suggestion of associated ideas like the Mexican picture-writing, it is not alphabetic writing. In the most complicated tablet of African hieroglyphics each object is distinct, and its representative significance is rarely difficult to trace. But the majority of the hieroglyphics of Palenque or Copan appear as if constructed on the same polysynthetic principle which gives a peculiar and distinctive character to the languages of the New World. This is still more apparent when we turn to the highly elaborated inscriptions on the colossal figures of Copan. In these all idea of simple phonetic signs utterly disappears. Like the *bunch-words*, as they have been called, of American languages, they seem each to be compounded of a number of parts of the primary symbols used in picture writing, while the pictorial origin of the whole remains clearly apparent. In comparing these minutely elaborated characters with those on the tablets, it is obvious that a system of abbreviation is employed in the latter ; and thus each group appears with the greater probability to partake of that peculiar characteristic of the whole grammatical structure of American language shown in its word-sentences. The plan of thought of the American languages is concrete, while certain euphonic laws lead to the dropping of portions of the words compounded together, in a manner exceedingly puzzling to the grammarian. By the same compounding process, new words are formed, as in the Algonquin *showiminaubo*, wine, i.e. *showimin*, a grape-berry, *aubo*, liquor ; *ozhebiegunaubo*, ink, i.e. *ozhieugun*, a writing ; *washebiegad*, a writer ; whence *ozhebiegai*, he writes : and *aubo*, liquor. The latter, like all abstract

terms, is only used in compound words, as in *ishkodai-waubo*, fire liquid, or whisky. So also, *makuhdaw-ekoomihya* a priest or clergyman, i.e. *muhkuhda*, black; *ekoomihya*, he is so dressed: the person who dresses in black, etc. An analogous process seems dimly discernible in the abbreviated compound characters of the Palenque inscriptions. But if the inference be correct, it shows that the Central American hieroglyphics are not used as phonetic, or true alphabetic signs; and this idea receives confirmation from the rare recurrence of the same group.

Such inscriptions cannot be confounded with Mexican picture-writing by any one who attempts an intelligent comparison of the two. In the latter, as in a picture, the eye searches for the most prominent features of the ideographic design, and interprets the various parts in their relation to one representation. But the Palenque inscriptions have all the characteristics of a written language in a state of development analogous to the Chinese, with its word-writing; and like it they appear to have been read in columns from top to bottom. The groups of symbols begin with a large hieroglyphic on the left-hand corner; and the first column occupies a double space. It is also noticeable that in the frequent occurrence of human and animal heads among the sculptured characters they invariably look towards the left: an indication, as it appears to me, that they are the graven inscriptions of a lettered people, who were accustomed to write the same characters from left to right on paper or skins. Indeed, the pictorial groups on the Copan statues seem to be the true hieroglyphic characters; while the Palenque inscriptions show the abbreviated hieratic writing. To the sculptor the direction of the characters was a matter of no moment; but if the scribe held his pen, or style, in his right hand, like the modern clerk, he would as naturally draw the left profile as we slope our current hand to the right. Arbitrary signs are also introduced, like those of the phonetic alphabets of Europe. Among

these the T repeatedly occurs : a character which was also stamped on the Mexican metallic currency.

The enterprising traveller, to whose researches so much of our knowledge is due, when reviewing the evidences of the intellectual progress of this ancient American people, dwells with fond favour on the idea he latterly adopted, that the ruins explored by him were of no very remote date ; because he felt that the nearer he could bring the builders of those cities to our own times, the greater is the chance of recovering the key to their language and the inscriptions in which their history now lies entombed. Palenque, it cannot be doubted, was a desolate ruin at the date of the Conquest. Backward behind the era of Europe's first knowledge of the New World, we have to grope our way to that age in which living men read its graven tablets, and spoke the language in which they are inscribed ; yet other cities survived to share in the later desolation of the Conquest, and Stephens thus sanguinely records his latest cherished hopes : "Throughout the country the convents are rich in manuscripts and documents written by the early fathers, caciques, and Indians, who very soon acquired the knowledge of Spanish and the art of writing. These have never been examined with the slightest reference to this subject ; and I cannot help thinking that some precious memorial is now mouldering in the library of a neighbouring convent, which would determine the history of some one of these ruined cities. Moreover, I cannot help believing that the tablets of hieroglyphics will yet be read. No strong curiosity has hitherto been directed to them ; vigour and acuteness of intellect, knowledge and learning, have never been expended upon them. For centuries the hieroglyphics of Egypt were inscrutable ; and, though not perhaps in our day, I feel persuaded that a key surer than that of the Rosetta stone will be discovered. And if only three centuries have elapsed since any one of those unknown cities was inhabited, the race of the inhabitants is

not extinct. Their descendants are still in the land, scattered perhaps, and retired like our own Indians, into wildernesses which have never yet been penetrated by a white man, but not lost; living as their fathers did, erecting the same buildings of lime and stone, with ornaments of sculpture and plaster, large courts and lofty towers with high ranges of steps, and still carving on tablets of stone the same mysterious hieroglyphics; and if, in consideration that I have not often indulged in speculative conjecture, the reader will allow one flight: I turn to that vast and unknown region untraversed by a single road, wherein fancy pictures that mysterious city, seen from the topmost range of the Cordilleras, of unconquered, unvisited, and unsought aboriginal inhabitants."

It is a fascinating dream. But lettered nations do not dwell apart through long centuries, hidden beyond the untravelled wilderness of so narrow a continent. It may indeed be that the tablets of Palenque shall yet be read, but it will be by no mysterious emergence of the lettered descendants of their sculptors from the shadows of that unexplored forest which stretches between the Cordilleras and the Caribbean Sea. The simpler elements of the graven characters admit of rearrangement into new groups, like the alphabetic elements of our written or printed words. Some of the figures are also simple, representing a human or animal profile, a shield, or a crescent; but others are highly complicated, and defy any attempt at intelligible interpretation of their representative or symbolic significance. They are no crude abbreviations, like the symbols either of Indian or Aztec picture-writing; but rather suggest the idea of a matured system of ideography in its last transitional stage, before becoming a perfect word-alphabet like that of the Chinese at the present day. Such I conceive it, in a less simple condition, actually to have been: a holophrastic or word-sentence alphabet; and, as such, a uniformity of hieroglyphics may have been compatible with

the existence of diverse dialects throughout the extensive region in which they were used.

In tracing the natural progress of a native American system of writing through so many successive steps, from the infantile condition of the rude Indian's birch-bark paintings to the most advanced stage of letters short of true alphabetic characters and phonetic signs, it is impossible to overlook the evidence thus afforded of a great lapse of time. The Chinese, whose civilisation and arts present so many points of resemblance to those of the New World, had advanced little, if at all, beyond the same stage in their system of writing, with its two hundred and fourteen characters, when they paused, and left to more favoured races the simpler vehicles of written thought. But by this arresting of their intellectual development at the stage of symbolised ideas instead of radical sounds, they possess a series of written characters which are employed with equal facility in Cochin-China, Japan, Loo-Choo, Corea, and in China itself, for expressing the words of languages mutually unintelligible. In this there is no analogy to the common use of the Roman alphabet among so many of the nations of Europe; but in our simple Arabic, or even in the Roman numerals, we have an apt illustration of written characters representing ideas, entirely independent of specific words or sounds. Thus 20, xx., signifies, *vinsati*, *εκοφι*, *viginti*, *venti*, *vingt*, *zwanzig*, or *twenty*; and when we write Louis XIV., it may be read with equal correctness, Louis the fourteenth, or *Louis quatorze*.

Among the examples of picture-writing illustrated in Lord Kingsborough's elaborate work on Mexican antiquities, the most curious of all is the Dresden codex, which invites special attention because it bears scarcely any traces of a common origin with the highly coloured and fantastic picturings of the Aztec manuscripts. The figures of objects, though delicately drawn, frequently consist of arbitrary or nondescript designs, and, as Prescott says, "are possibly

phonetic. Their regular arrangement is quite equal to the Egyptian. The whole infers a much higher civilisation than the Aztec, and offers abundant food for curious speculation." Many of them are, indeed, pictorial representations accompanied by hieroglyphic characters arranged in lines, as though constituting a written commentary or description along with numerical notation. They certainly suggest a resemblance to the Palenque hieroglyphics which is totally wanting in the Mexican paintings. Nor is there any improbability in the supposition that the traces of a higher



FIG. 101.—Hieroglyphic Writing.

Toltec civilisation survived, and exercised its ameliorating influences on the fierce Aztec conquerors. In the accompanying illustration (Fig. 102), copied from Lord Kingsborough's version of the Dresden codex, it seems in no degree irreconcilable with the traces of a higher antiquity in the ruined cities of Central America, that we have here an example of the written characters which figure on the sculptured tablets of Palenque.

Compared with the hieroglyphic writing of ancient Central America, or even the picture writing of the Aztecs, the

Peruvian quipu was a barbarous substitute. The name originally signified a knot ; and the quipu in use for recording facts, or committing ideas to safe keeping for transmission to future generations, consisted of a cord of different coloured strings, to which others were attached, also distinguished by their colours. With these specific ideas were associated. Thus *yellow* denoted gold and all the allied ideas ; *white*, silver or peace ; *red*, war or soldiers ; *green*, maize or agriculture, etc. ; and each quipu was in the care of its own *Quipucamayoc* or keeper, by whom its records were interpreted in any doubtful case. Upon the cords the requisite number of knots were made, and when used for arithmetical purposes, they could be combined to represent any series of numbers, and employed in difficult computations with great facility. In their arithmetical system a single knot meant *ten* ; two single knots together, *twenty* ; a knot doubled and intertwined, *one hundred* ; tripled after the same fashion, *one thousand* ; and by the union of two or more of such, *two hundred*, *two thousand*, etc. The colour, the mode of intertwining the knots, the twist of the cord, the distance of the knot from the main cord, or of the several knots from each other, had each a special significance, indispensable to the proper interpretation of the quipu. By means of such records, well trained officials kept registers of the census and military rolls, accounts of the revenues, and much other important statistical information. Each province had its own registrars, with varying details suited to the specialities of their district, its form of tribute, or the nature of its mineral, pastoral, or agricultural resources ; and the interpretation of the national quipus required the aid of registrars from many remote provinces. Annalists, chroniclers, genealogists, and poets, were all trained to transmit by tradition the chain of facts or ideas associated with the arbitrary signs of the quipus ; and by the like means information of every kind was perpetuated. Acosta mentions that he saw a woman with a

handful of knotted strings of diverse colours, which she said contained a general confession of her life.

With the fall of Montezuma's empire, its picture-writings were abandoned to the same fate as the Arabic manuscripts of Granada; and only a few imperfect fragments or chance copies have survived to reflect the ingenuity and determine the progress of Aztec culture. But the rude system of the Peruvian quipu perished with its keepers; and a piece of pottery, or the masonry of a ruined roadway station, is more eloquent for us than all the many-coloured and knotted registers of the Incas could be. But in another respect the quipus of the Peruvians have a singular interest for us, for it is impossible to overlook the analogy between them and the wampum in use by the American Indians for a similar purpose. Boturini, indeed, discovered a specimen of the quipu in Tlascala, which had nearly fallen to pieces with age; and both M'Culloch and Prescott only reject his inference that the ancient Mexicans were acquainted with the Peruvian mode of recording events, by assuming the Tlascalan quipu to have been an Indian wampum belt. But the correspondence between the Peruvian quipus and the Indian wampum belts, and their use in almost precisely the same way for the purpose of registering events, present coincidences too remarkable to be accounted for as mere accidental resemblances. Nor is our interest diminished, when it is borne in remembrance that the wampumbelt of the North American Indian reproduces the arbitrary mnemonic system of Peru, alongside of a totally independent native system of picture-writing.

Before comparing the almost identical *memoria technica* of the southern Peruvians and northern Indians, it is important to determine the actual acquirements and usages of the Peruvians in relation to painting or picture-writing. Prescott, indeed, assumes their total ignorance in this respect, and derives from it an additional proof of the entirely distinct origin of all the characteristic elements of

Peruvian and Mexican civilisation.¹ But it is inconceivable that a people skilled in modelling in clay copies of every familiar object in nature, and sporting with an exuberant fancy in endless grotesque and ingenious devices; and who, moreover, painted their pottery and wove their parti-coloured dresses with considerable taste and great variety of pattern: should have made no attempt at drawing or painting on agave-paper or canvas. Humboldt, who notices the discovery of bundles, or books of picture records, among the Panoë Indians of South America to the east of the Andes,² puts this beyond question. "It has recently been doubted," he remarks, "whether the Peruvians were acquainted with symbolic paintings in addition to their quipus. A passage taken from the *Origen de los Indios del Nuevo Mundo* (Valencia, 1610, p. 91), leaves no uncertainty on this point. After speaking of the Mexican hieroglyphics, Father Garcia adds: 'At the beginning of the Conquest, the Indians of Peru made their confessions by paintings and characters, which indicated the Ten Commandments, and the sins committed against these Commandments.' Hence we may conclude that the Peruvians made use of symbolic paintings; but that these were more grotesque than the hieroglyphics of the Mexicans, and that the people generally made use of knots or *quipus*."³ It was not, therefore, because of their ignorance of a rude picture-writing, equivalent, probably, to all that was effected by the Aztec chronicler in the depiction of sensible objects with their associated ideas, that the Peruvians adhered by preference to their quipus. The rudest picture-writing is, indeed, far before the most perfect system of quipus as a germ of possible development. But if we look, for example, at the "Lawsuit in Hieroglyphical Writing," engraved by Humboldt,—a document prepared for pleading and evidence before a legal tribunal,—we find no series of word-symbols

¹ *Conquest of Peru*, n. i. ch. iv, p. 121.

² Humboldt's *Researches*, London, 1814, vol. i. p. 174.

³ *Ibid.* vol. ii. p. 221.

setting forth the case, but a mere ground-plan accompanied by pictorial references to the parties, and some leading points in the suit, which must have depended almost as entirely on memory and the association of ideas for its practical use, as the parti-coloured and knotted quipus in the hands of well-trained Peruvian amautas.

Bearing in remembrance, then, the perfection to which the use of the quipu had been brought by a well-systematised training and division of labour, and the faith reposed in its accuracy in the most practical questions of Peruvian reckoning and statistics : let us now inquire what the Indian wampum was in its most perfect form and use. The germs of a possible native civilisation among the Indian tribes of North America are naturally to be sought for in that remarkable league of the Iroquois, by which the conquests of France were so effectually arrested to the south of the St. Lawrence ; and among the members of that league we find the wampum belt in use for all their most sacred and important records. By means of the wampum the laws of the League were recorded, and every contract or treaty was defined and guaranteed.

Wampum consists of beads of different colours strung together, and generally woven into a belt. Hubbard describes it as "of two sorts, white and purple. The white is worked, out of the inside of the great concho, into the form of a bead, and perforated to string on leather. The purple is worked out of the inside of the muscle shell. They are woven as broad as one's hand, and about two feet long. These they call belts, and give and receive at their treaties as the seals of their friendship."¹ The colours of the wampum, however, and indeed its whole material, varied at different periods and among diverse tribes. One singularly interesting example of its use as the evidence and sole title-deed of an extensive transfer of land, was preserved in England until very recent years, by Mr. Granville John Penn,

¹ Hubbard's *Narrative, Indians in New England*, p. 40.

a descendant of William Penn, and is now in the cabinet of the Historical Society of Philadelphia. It is the belt of wampum delivered by the Lenni-Lenapé sachems to the founder of Pennsylvania, at "the Great Treaty," under the elm-tree at Shackamox in 1682. After having been handed down for generations in the founder's family, it was presented to the Historical Society of Philadelphia in 1857. It is composed of eighteen strings of wampum, formed of white and violet beads worked upon leather thongs; and the whole is woven into a belt twenty-eight inches long, and two and a half inches broad. On this five patterns are worked in violet beads on a white ground, and in the centre Penn is represented taking the hand of the Indian sachem: the former being the larger figure of the two, and indicated by his European head-dress.¹

In 1675 the famous war of the New England chief, Metacomet, the sachem of the Wampanoags,—better known as King Philip,—broke out, and threatened for a time the extermination of the colonists. Before its close, thirteen towns in Massachusetts, Plymouth, and Rhode Island, had been destroyed, and scarcely a family in New England had escaped the loss of some of its members. When at length Philip had fallen, and the hostile tribes were almost exterminated, Annawon, an aged chief, one of the last surviving sachems of the Wampanoags, approached Captain Church, the leader of the colonists, and thus addressed him: "Great Captain, you have killed Philip, and conquered his country. I and my company are the last that war against the English. You have ended the war, and therefore these belong to you." He then handed to him two broad belts elaborately worked in wampum, "edged with red hair from the Mahog's country." One of them reached from the shoulders nearly to the ground. It was the Magna Charta of the New England tribes, who had now fought their last fight. They

¹ This wampum-belt is accurately figured, the size of the original, in the *Memoirs of the Historical Society of Pennsylvania*, vol. vi.

were pitilessly exterminated. Old Annawon himself was put to death, along with Tispaquin, the last of Philip's great sachems, and all the prisoners who had been active in the war. The remainder were sold as slaves, including a poor boy, the son of Philip, whose only crime was his relationship to the great chief. After keen discussion as to his fate, in which Increase Mather pleaded against mercy, the boy's life was spared. The New England divine urged the case of Hadad, of the king's seed in Edom, spared as a little child, when Joab, the captain of the host, had smitten every male among the Edomites, who survived to rise up as the adversary of Solomon, when he heard in Egypt that David slept with his fathers, and Joab, the captain of the host, was dead. Perhaps it had been better for the son of the great Wampanoag sachem to have shared the fate of the vanquished chiefs. He was finally sent as a slave to Bermuda, from whence he never returned to dispute the possession of his father's wampum, and the rights of which it was the symbol.

The original Wampum of the Iroquois, by means of which the laws of the League were recorded, is described by Mr. Lewis H. Morgan, in his history of the League, as made of spiral fresh-water shells, strung on deerskin thongs or sinews, and the strands braided into belts, or simply united into strings. His narrative of the mode of using these northern *quipus* will best illustrate the close analogies they present to those of the southern continent. Describing the great councils of the League, he says: "The laws explained at different stages of the ceremonial were repeated from strings of wampum, into which *they had been talked* at the time of their enactment. In the Indian method of expressing the idea, the string or the belt can tell, by means of an interpreter, the exact law or transaction of which it was made, at the time, the sole evidence. It operates upon the principle of association, and thus seeks to give fidelity to the memory. These strings and belts were the only visible

records of the Iroquois, and were of no use except by the aid of those special personages who could draw forth the secret records locked up in their remembrance."¹ There was, accordingly, a sachem specially constituted as "Keeper of the Wampum;" and verbal promises, interchanged either among themselves or with foreign tribes, were regarded as of little moment if no strings or belts had been employed to ratify them and secure their remembrance. Sir William Johnston records as the result of his experience: "They regard no message or invitation, be it of what consequence it will, unless attended or confirmed by strings or belts of wampum, which they look upon as we our letters, or rather bonds."² A belt of wampum was also used at their festivals, when a council of repentance preceded the rejoicings, and public confession of faults, with the pledge of amendment, were put on record by its means; and strings of wampum still constitute the evidence of any special commission among the Indians of the Six Nations of Canada.

The resemblance between the two systems of the quipu and wampum, with their appointed keepers, and the perpetuation of the national chronicles and enactments by means of these as mnemonic guides, is highly suggestive of a common origin; however remotely we may be compelled to seek for that dividing line on which the essentially distinct elements of picture-writing and recording by an arbitrary association of ideas met, as it were, and exchanged their diverse modes of giving form and perpetuity to fleeting words. The picture-writing is of indigenous growth among the northern tribes, the quipu seems no less essentially native to Peru; but we are not without some faint indications of a source other than the northern forest Indian, from whence his mode of quipu-registering and ratification of contracts may have been derived; or rather perhaps, from whence the Indian tribes of the northern continent may

¹ *League of the Iroquois*, p. 120.

² *Documents relating to Colonial History of New York*, vol. ii. p. 624.

have borrowed this product of the immature civilisation of the Peruvian Cordilleras. In the sepulchral mounds of the Mississippi Valley the relics of art present great uniformity of character ; and among these, beads of shell, bone, and other materials, have been found in greater quantities than seems to be readily accounted for as mere personal ornaments. In the Grave Creek Mound, shell-beads, such as constitute the wampum of the forest tribes, amounted to between three and four thousand ; and it seems singularly consistent with the partial civilisation of the ancient Mound-Builders, to assume that in such deposits we have the relics of sepulchral records which constituted the scroll of fame of the illustrious dead, or copies of the national archives deposited with the great sachem to whose wisdom or prowess the safety of his people had been due. The wampum chronicle, unstrung by Time's decaying finger, seems no unmeet inscription for the nameless dead over whom the great earth-pyramid was reared. The memories once associated with its many strings have irrecoverably passed away ; yet not more so than the annals of the civilised Incas stored up in their many-coloured skeins of knotted threads ; or even, perhaps, than the sculptured inscriptions of Copan or Palenque.

CHAPTER XIX.

ANTE-COLUMBIAN TRACES.

THE LANDING OF COLUMBUS—THE LOST ATLANTIS—AMERIGO VESPUCCI—PHENICIAN TRACES—COLONISATION OF GREENLAND—DISCOVERY OF VINLAND—EVIDENCE OF THE *SAGAS*—KARLSBERG'S EXPEDITION—TRACES OF THE NORTHMEN—RUNIC INSCRIPTIONS—THE KINGIKTORSOK TABLET—RECORD OF EXPLORATION—THE ISALIKKO INSCRIPTION—THE IERREIT SEPULCHRAL SLAB—CHARACTERISTIC GRAPHIC RECORDS—THE BIGHTON ROCK—THE PHENICIANS IN AMERICA—NEW ENGLAND ANTIQUARIES—THORPINS'S RUNIC RECORD—IMAGINARY RUNES—THE MONHEGAN INSCRIPTION—THE CHAVE CREEK STONE—ITS ALPHABETIC CHARACTER—A STRANGE MEDLEY—ASSIGNED DATE—LIBYAN THEORIES—INSCRIBED AXE-BLADES—ENGRAVED ANTED HATCHET—LITERATE REMAINS—FIGURED SLONE SPHERE—TELESCOPIC INSTRUMENT—THE ALABAMA STONE—THE MANLIUS STONE—EUROPEAN MEMORIALS.

THE year 1492 marks in many important respects the close of the Old World's ancient, the beginning of its modern history. But for the native of the Transatlantic hemisphere it is the dawn of all definite annals. It constitutes for America what the era of Julius Cæsar's landing is for Britain: the lifting of the veil behind which lay unrecorded centuries of national story, and the admission into the great family of nations of those who had remained isolated and apart through unnumbered generations.

In previous chapters some attempt has been made to interpret that obscure past, which, though relatively speaking so modern, is remoter from all our preconceived ideas and sympathies than the old Roman World. The fifteenth century is, in fact, as ancient for America as the first century is for Britain, or B.C. 2000 for Egypt. No wonder, therefore, that every glimpse of a fancied memorial of ante-

Columbian relations with the Old World should present a fascinating charm to the American archæologist; or that even a pardonable credulity should occasionally be exercised in the reception of any apparent evidence of such intrusive antiquities disclosing themselves among relics of aboriginal native arts. But to the impulse awakened by the ambition to resuscitate the long-buried past, has been added the no less influential stimulus of national pride and emulation, both in the Old and the New World. To such combined motives we owe the *Antiquitates Americanæ*, and the *Grönland's Historiske Mindesmærker* of the Danish antiquaries; the publication of which gave a fresh impetus and direction to American research. The idea of ancient intercourse between Europe and America is no novelty; for the earliest students of American antiquities turned to Phœnicia, Egypt, or some other old-world source for everything which involved the germs of civilisation; and, indeed, so long as the descent of the human race from a single pair remained unquestioned, some theory of immigration was inseparable from any recognition of the common humanity of the American and other races. One favourite idea, accordingly, long found acceptance, which traced the peopling of the American continent to the ten tribes of Israel; and discovered in the Indian languages Hebrew words and idioms, and in native customs analogies to Jewish ceremonial rites. Still older traces have been sought in the lost Island of Atlantis; in obscure allusions of Herodotus, Plato, Seneca, Pliny, and other classical writers, to islands or continents in the ocean which extended beyond the western verge of their world; in the Punie expedition, by the Atlantic, to the Indian Ocean, accredited to Hanno; the circumnavigation of Africa by the way of the Red Sea, assigned to Phœnician mariners under Pharaoh-Necho, upwards of 2000 years before Vasco de Gama rounded the Cape; the Ophir, to which the ships of Tyre, manned by servants of Hiram "that had knowledge of the sea," sailed for gold and

algum trees for Solomon's great works; in the Antilla mentioned by Aristotle as a Carthaginian discovery; and in that other obscure island which Diodorus Siculus assigns to the same voyagers, as a secret reserved for their own behoof, should fate ever compel them to abandon their African homes.

This at least may be inferred from numerous allusions of classic authors, that maritime nations of the Mediterranean were accustomed from a remote period to navigate the ocean which stretched away in undefined vastness from the western bounds of the European and African continents. It follows from such Atlantic voyages, not only that Madeira, the Canary, and Cape Verde Islands, but even the Azores, may have been among the Phœnician and Punic discoveries referred to by Aristotle, Pliny, and others. Humboldt, indeed, assigns reasons, satisfactory to his own mind, for believing that the Canary Islands were known, not only to the Phœnicians and Carthaginians, but also to the Greeks and Romans, and, "perhaps even to the Etruscans." Northward to the Tin Islands of the English Channel, as well as southward beyond Cape Verde, ancient voyagers from the Mediterranean sailed into the wide waste of the Atlantic; and from our knowledge of the winds and currents of that ocean, it is no inconceivable thing that some of them should have been driven out of their course, and landed on more than one point of the American continent. To such an accidental landing America may be said to owe its name. Pedro Alvares de Cabral, sailing in command of a Portuguese fleet in the last year of the fifteenth century, on the eastern route just rediscovered by Vasco de Gama, was carried by the equatorial current so far to the west of his intended course that he found himself unexpectedly in sight of land, in 10° s. latitude, thereby discovering Brazil. The king of Portugal thereupon despatched the Florentine, Amerigo Vespucci, who explored the coast, prepared a map of it, and thereby achieved the honour due to Columbus, of

giving his name to the new continent. So recently as 1833 the wreck of a Japanese junk on the coast of Oregon showed how, in like manner, across the wider waste of the Pacific, the natives of the Old World may have been borne to plant the germs of a new population, or to leave the memorials of Asiatic civilisation on American shores.

It is not, therefore, altogether without reason, that the vague references of classic writers to lands lying beyond the Pillars of Hercules have had an exaggerated value assigned to them. The conviction of some ancient intercourse between the Old World and the New has furnished a fruitful theme for speculation, almost from the year in which the Genoese voyager achieved his long-cherished dream of discovery. It has only required the asserted recovery of Egyptian, Phœnician, or Punic traces of graphic or plastic art, to revive the faith in an American commonwealth old as that Atlantis which the Egyptian priesthood told of to Solon as even then among the things of an ancient past.

Such speculations have been discussed in all their changing forms, and investigated with loving enthusiasm, though ever proving intangible when pressed to any practical deduction. In Humboldt's *Researches* is engraved a fragment of a supposed inscription, copied by Ranson Bueno, a Franciscan monk, from a block of granite which he discovered in a cavern in the mountain chain between the Orinoco and the Amazon. Unfortunately, Humboldt was unable to inspect it for himself. Possibly it would have proved only the natural markings of graphic granite. He remarks of the copy furnished him by the monk: "Some resemblance to the Phœnician alphabet may be discovered in these characters, but I much doubt whether the good monk, who seemed to be but little interested about this pretended inscription, had copied it very carefully." Not much could be made out of "Phœnician" characters her-

alded in this fashion. But the appearance in 1837 of the *Antiquitates Americanae, sive scriptores septentrionales rerum ante-Columbiarum in America*, issued by the Royal Society of Northern Antiquaries at Copenhagen, under the learned editorship of Professor Charles Christian Rafn, produced an entire revolution, alike in the form and the reception of illustrations of ante-Columbian American history. While the publication of that work gave a fresh interest to the vaguest intimations of a dubious past, it seemed to supersede them by tangible disclosures, which, though "but of yesterday" in comparison with such mythic antiquities as the Egyptian Atlantis, nevertheless added some five centuries to the history of the New World. From its appearance, accordingly, may be dated the systematic resolve of American antiquaries and historians to find evidence of intercourse with the ancient world prior to that recent year of the fifteenth century in which the ocean revealed its great secret to Columbus.

From the literary memorials of the old Norsemen, thus brought to light, we glean sufficient evidence to place beyond doubt, not only the discovery and colonisation of Greenland, by Eric the Red,—apparently in the year 985,—but also the exploration of more southern lands, some of which, we can scarcely doubt, must have formed part of the American continent. Of the authenticity of the manuscripts from whence these narratives are derived there is not the slightest room for question; and the accounts which some of them furnish are so simple, natural, and devoid of anything extravagant or improbable, that the internal evidence of genuineness is worthy of great consideration. The exuberant fancy of the Northmen, which revels in their mythology and songs, would have constructed a very different tale had it been employed in the invention of a southern continent for the dreams of Icelandic and Greenland rovers. Some of the latter Sagas do, indeed, present so much resemblance in their tales of discovery to those of

older date, as to look like a mere varied repetition of the original narrative with a change of actors, such as might result from different versions of an account transmitted for a time by oral tradition before being committed to writing. But, with all reasonable doubts as to the accuracy of details, there is the strongest probability in favour of the authenticity of the American Vinland of the North-men.

About the year 1000—when St. Olaf was introducing Christianity into the Norse fatherland,—Leif, a son of Eric, the founder of the first Greenland colony, is stated in the old Eric Saga to have sailed from Ericsfiord or other Greenland port, in quest of southern lands already reported as seen by Bjarni Herjulfson. Pursuing his voyage, Leif landed on a barren coast where a great plain covered with flat stones stretched from the sea to a lofty range of ice-clad mountains. To this he gave the name of Helluland, from *hella*, a flat stone; and the modern Danish editor conceives he finds in such characteristics evidence sufficient to identify it with Newfoundland. The next point touched presented a low shore of white sand, and beyond it a level country covered with forest, to which the name of Markland, or Woodland, was given. This, which, so far as the name or description can guide us, might be anywhere on the American coast, is supposed by the editor of the *Antiquitates Americanae* to have been Nova Scotia. The voyagers, after two more days at sea, again saw land; and of this the only characteristic, that the dew upon the grass tasted sweet, has been assumed as sufficient evidence that Nantucket, where honey-dew abounds, is the place referred to. Their further course shoreward, and up a river into the lake from which it flowed, is supposed to have been up the Pacasset River to Mount Hope Bay; and there the voyagers passed the winter. After erecting temporary lodgings, Leif divided his followers into two parties, which alternately proceeded on exploring excursions. One of

these, Tyrker, a southerner,—*sudrmadr*, or German, as he is supposed to have been,—having wandered, he reported on his return that he had discovered vines and grapes such as he had been familiar with in his own Rhine-land. With these accordingly, the vessel was laden, and Leif commemorated the discovery by giving to the locality the name of Vinland.

The same narrative reappears in Sagas of later date, with slight variations and some inconsistencies, but the local features described are equally vague ; and it depends much more on geographical probabilities than on any direct evidence furnished either in the account of Bjarni Herjulfson's voyage, or in the somewhat more definite story of Leif Ericson : if we concur in the assumption of their modern editor that in these we have the earliest records of the discovery of Newfoundland, Nova Scotia, Massachusetts, Rhode Island, Long Island, and Connecticut. In a subsequent brief *résumé* of the subject, Professor Rafn remarks : "It is the total result of the nautical, geographical, and astronomical evidences in the original documents, which places the situations of the countries discovered beyond all doubt. The number of days' sail between the several newly-found lands, the striking description of the coasts, especially the white sand-banks of Nova Scotia, and the long beaches and downs of a peculiar appearance on Cape Cod (the *Kjalarnes* and *Furdustrandir* of the Northmen), are not to be mistaken. In addition hereto we have the astronomical remark that the shortest day in Vinland was nine hours long, which fixes the latitude of $41^{\circ} 24' 10''$, or just that of the promontories which limit the entrances to Mount Hope Bay, where Leif's booths were built, and in the district around which the old Northmen had their head establishment, which was named by them *Hóp*." This nautical and astronomical evidence, however, is far from being so precise as the geographical deductions imply. Montgomery, in the notes to his *Greenland*, observes : "Leif and his party

wintered there, and observed that on the shortest day the sun rose about eight o'clock, which may correspond with the forty-ninth degree of latitude, and denotes the situation of Newfoundland, or the river St. Lawrence." The data are the mere vague allusions of a traveller's tale; and it is indeed the most unsatisfactory feature of those Sagas that the later the voyagers, the more confused and inconsistent their narratives become on all points of detail. This is specially observable in reference to Thorfinn Karlsefne's expedition to Vinland, in the beginning of the eleventh century, "when the folks in Brattablid began to urge greatly that Vinland the Good should be explored." He, too, visited Litla Helluland, or Newfoundland, and discovered Cape Sable Island, as is supposed; giving to it the name of Bjarney, or Bear Island, from a bear (*björn*) killed by some of his party there. Pursuing their coasting voyage, he and his company visited the same points seen before by Leif; gathered grapes and also corn in Vinland; settled there for a time, and—as we shall find by and by,—left their mark behind them.

That voyagers from the Old World may long before have gazed on the same shores which first delighted the watchers from the deck of the "Santa Maria," on the 12th of October 1492, is by no means an improbable thing. The rude undecked "Pinta" and "Niña," which, with the "Santa Maria," constituted the squadron of Columbus, were certainly not better fitted to dare the broad Atlantic than the ships which bore to Tyre and Carthage the mineral wealth of the Kassiterides. Much less can it excite any reasonable doubt that the hardy Norse voyagers who made permanent settlements on the coasts and islands of the Mediterranean, established themselves in the Orkneys and Hebrides, and discovered and colonised Iceland and Greenland, may have extended their exploratory voyages southward from the latter to the coasts of Newfoundland or the New England shores. The voyage from Greenland,

or even from Iceland, to the coast of Maine, was not more hazardous or difficult than from the native fiords of the vikings to the coasts and islands of the Mediterranean. The wonder rather seems, that those whom the bleak northern ocean, and the dreary shores of Iceland, could not deter from discovery and permanent colonisation ; and to whose hardy endurance the icebound coasts of Davis Straits presented an aspect begirt with such attractions that they conferred on them the name of Greenland : should have failed, not only to discover, but permanently to colonise the Atlantic shores of the New World with the same indomitable race which supplanted the Franks of Gaul, and conquered the Saxons of England.

The question naturally suggests itself to the mind, after dwelling on earlier or later glimpses of such ante-Columbian explorers : Has no memorial of ancient Phœnician or Carthaginian, Egyptian, Greek, or younger Norse voyager, survived as a voice from the past, to tell of such early intercourse between the Old World and the New ? The presence of pagan and Christian Norsemen is still attested in the British Isles by weapons, implements, sepulchral memorials, and above all by inscriptions. Norse runic inscriptions have been found even beneath the foundations of ancient London ; and Professor Rafn recently undertook the interpretation of another such inscription on the marble lion of the Piræus, now at the Arsenal of Venice. According to him, among other Varangians in the service of the Greek Empire commemorated there, it names Harold Hardrada, who fell at the battle of Stamford Bridge, A.D. 1066, and to whom our Saxon Harold offered "seven feet of ground, or, since he was so tall, a few inches more !" Numerous inscriptions in the native land of the Northmen preserve memorials of the wanderings of these bold adventurers. They are frequently designated *Englandsfari*, on account of their expeditions to England ; one Icelfander is styled *Rafn Hlymreksfari*, owing to his voyages to Ireland ; nor

was King Sigurd of Norway the only Norseman who won for himself the title of *Jórsölafari*, or traveller to Jerusalem.¹ Northern inscriptions repeatedly refer to adventures in "the western parts," meaning, however, in general the British Isles, where corresponding evidence proves their presence. Seventeen runic inscriptions, more or less perfect, still remain in the Isle of Man, to attest the presence of Norse colonists there, six or seven centuries ago. On Holy Island, in the Firth of Clyde,—where King Haco's fleet lay for some days after his defeat at Largs in 1263,—are still legibly graven the runic memorials of Amudar, Ontur, and Nicholas á Hæne, Norwegians, possibly of Haco's fleet. In Orkney, recently discovered runic inscriptions, remarkable for their character and extent, preserve literate memorials of adventurous Northmen from the tenth to the twelfth century, including those of the Jerusalem-farers, who, in 1153, followed Earl Ragnvald to the Holy Land; and precisely the same kind of evidence bears testimony to the existence of Norse colonies on the shores of Greenland, in the eleventh and twelfth centuries.

The precision and simplicity of such memorials of ancient Scandinavian colonisation are worthy of note; for runic inscriptions are referred to by some assertors of their discovery in America, with about as definite a comprehension of what such really are, as that of the Mandan Indian, who, seeing an English traveller busy reading a newspaper, pronounced it to be a medicine for sore eyes. They are spoken of as though they were mysterious hieroglyphics; instead of being, as they are, records inscribed in a regular alphabet, and in a living language familiar to the student of Icelandic literature. The Greenland inscriptions, the work of contemporaries of Bjarni Herjulfson and Leif Ericson, are of this character; and therefore show us what we have to look for, should any such records survive to attest the visits of Northmen in the tenth and eleventh centuries, to

¹ *Mémoires de la Société Royale des Antiquaires du Nord*, 1845-49, p. 354.

Vinland, or other early discovered locality of the American continent. To the modern Norwegian and Dane, such memorials of the hardihood and enterprise of their Norse ancestry are full of interest; nor can we fail to sympathise in the gratification with which Danish antiquaries have recovered from the ice-bound coasts of Greenland, evidence of the presence of their Norse fathers there long prior to the era of Columbus. The Scandinavian characteristics of the Greenland tablets are unmistakable; but their minute correspondence to other graven memorials of the Norsemen, alike in their native land and in the later scenes of their wanderings in Europe, has not sufficed to prevent an over-credulous zeal from persuading itself into the belief that

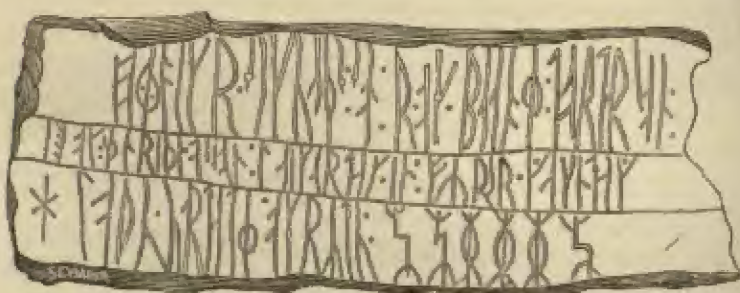


FIG. 103.—Kingiktorsoak Runic Inscription.

rude Indian tracings, if not also mere cracks and fissures of the natural rock, are graven inscriptions of such ante-Columbian voyagers.

The above is an accurate representation of the most remarkable among the Greenland inscriptions, and will suffice, better than any description, to convey a correct idea of a genuine Norse runic tablet. It was found in 1824, on the Island of Kingiktorsoak, in Baffin's Bay, $72^{\circ} 55' \text{ N. lat.}$, $56^{\circ} 5' \text{ W. long.}$; and is now preserved at Copenhagen. Of its genuine Norse characters and language no doubt can exist. The only dubious points are the word *rydu*, variously rendered "cleared the ground," "explored," and

"engraved;" and the concluding group of figures which follow it at the right-hand side of the lowest line, interpreted by Professor Rafn as the date 1135. Tied letters, or *binderuner*, are not less frequent in Runic than in Roman inscriptions. The only characters open to any difference of opinion are at the commencement of the first and second lines. The first *gv* or *co*, is of little moment as modifying the proper name *Guelligr*, supposed by Professor Rafn to stand for Erling. The puzzling compound rune with which the second line begins is possibly only the terminal *r* of the *Tortarsonr*, as in the previous *Sigvathsonr*, both familiar Icelandic proper names. The whole forms a record of discovery entirely consistent with the spirit of the old Sagas:—

GOELLIGR SIGVATHSSONR OK BJARNI TORTARSON
H OK ENKITHI OSSON LAVGARDAG IN FYRIR GARDAG
HLOTHV VARDATE OK RYDV, MCMXXXV.

i.e. *Elligr Sigvathson and Bjarni Tortarson, and Enkithi Odsson, on the seventh day before victory day,*¹ *raised these stones and explored, [1135.]* The interpretation of the final date is disputed, and is certainly open to question. If the correspondence of the two first characters with the last be allowed to be sufficiently close to admit of their being regarded as repetitions of the same figure, it will be observed that the intermediate ones also agree. Rendered on this principle into Roman numerals, it would be *VVXXXV*, or 1035. Dr. Brynjulfson of Iceland, who concurs in the interpretation otherwise, regards the supposed numerals as merely an ornamental completion of the line. Less room for diversity of opinion exists in regard to a sepulchral slab graven in the same familiar runic characters, which was discovered at Igalikko, about nine miles from the Danish colony of Julianeshaab, in 1829. The legend is inscribed without any alphabetic complexities, on a thin

¹ The day of victory (*Gagndag*, lit. gain-day) is stated by the Editor of the *Antiquitates Americanae* to be an ancient festival of the Northmen, which fell on the 25th of April.

slab of red sandstone; and reads with simple pathos as follows:—

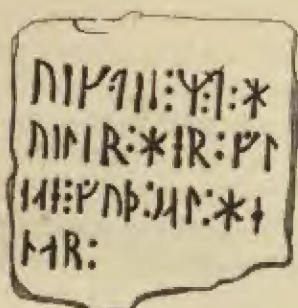


FIG. 104.—Igalikko Runic Inscription.

VIGDIS M[AGNVS] D[OTTIR] HVILIR HER GLEDE GVTH SAL HENAR, i.e. *Vigdis, Magnus' daughter, rests here; may God gladden her soul.* The abbreviated proper name *Magnus*, is necessarily conjectural now; though when the memorial was reared, there was no need of more than the initial to preserve among the members of the little Greenland community the memory of Norse father and child. This monument indicates the recognition of the Christian faith, and the presence of Christian worshippers in Greenland certainly not later than the twelfth century. A simpler memorial of the same kind is a wooden cross found in the cemetery of Herjulfnes, with the single word *MARIA* carved in runic letters on one of its limbs. Such evidences of ancient Christian settlements on the shores of Greenland acquire an additional interest from associations with the zeal of the Moravian missionaries of a later era; and the ruins of more than one early Christian church have been discovered, in confirmation of those proofs that Christianity was first transplanted to the New World by hardy Scandinavian voyagers from Norway and Iceland. One of these memorials of the architectural skill of the first Norse colonists, is a plain but tastefully constructed church of hewn stone, which stands nearly entire, though unroofed,

at Kakortok, in the same district of Brattahlid, and only a few miles distant from Igalikko, where the sepulchral tablet of Vigdis was discovered. Numerous objects of less importance, including iron implements, pottery, fragments of church bells, etc., found in the same locality, throw additional light on the civilisation of the ancient colonists of Greenland; and indicate the traces to be looked for in proof of their settlement farther south on the American coasts. The latest in date of such literate memorials of the ancient Arctic colony is probably a sepulchral slab found in 1831, at Ikigeit, lat. 60° N. It is in Roman characters, though in the old Norse tongue. The letters are ranged in two lines on either side of a plain cross cut on a slab of granite, one end of which, with a fragment of the inscription, is broken off. It furnishes this simple memento of the long-forgotten dead:—

HER BVILIE HEO[ALD]R KOLGRIMSS[ON]

i.e. *Here rests Roald the son of Kolgrim.*

The Norse colonies of Greenland, after being occupied, according to Norwegian and Danish tradition, from the tenth to the fifteenth century, were as entirely lost sight of as the mysterious Vinland of the Sagas; and when at length an interest in their history revived, much fruitless labour was expended in the search for a colony on the coast lying directly west from Iceland. Towards the middle of the seventeenth century, an oar was drifted on the Iceland coast, bearing this inscription in runic characters: OFT VAR EK DASA DUE EK DRO THICK; *Oft was I weary when I drew thee*; but it was not till the close of the following century that the traditions of the ancient Greenland colonies began to excite renewed attention. Of the fabled charms of a Hesperian region discovered within the Arctic Circle, yet meriting by the luxuriance of its fertile valleys its name of Greenland, many a Norse legend pictured the enviable delights; and some of these, as well

as the traditions of the lost Vinland, had been embodied by our English poet, James Montgomery, in the cantos of his *Greenland*, long before the *Antiquitates Americanae* issued from the Copenhagen press.

The ancient Norsemen, the reputed discoverers of Vinland, and the explorers of Rhode Island and Massachusetts, are also affirmed to have pursued their explorations far beyond such accessible points, and to have acquired a knowledge of lands alike in the northern latitude of Wellington Channel, and on the coast of Florida. We have seen the characteristics of their undoubted memorials on the Western shores of the Atlantic, and know what to look for on other sites. They were prone to leave such graphic records of their presence, and have transmitted the habit to their collateral descendants. Both the modern Englishman and the Anglo-American are notorious for the furor which finds its gratification in inscribing on the walls of temple or ruined tower, and on the remotest and most inaccessible cliffs, memorials of their presence. The pyramids, temples, and catacombs of the Nile Valley; the summits of the Alps, the Andes, and the Himalayas; cliffs of remotest Arctic and Antaretic regions; and all the more familiar and favourite haunts of modern travel, will tell to other ages of the wanderings of the venturesome Briton and his sturdy American sons. But this craving for such fame is no Anglo-Saxon heritage. Anglo-Saxon runes are of the rarest occurrence in Britain, and nearly unknown beyond its limits; and Englishmen doubtless inherit this, as well as the spirit of maritime enterprise, and many other characteristic attributes of the modern stock, from their hardy Danelagh ancestry. The Norseman was proud of his wanderings, and delighted to record explorations of far-distant regions, on his father's or his brother's *bautastene*. No wonder, therefore, when the antiquaries of Copenhagen were on the track of the long lost Vinland, that they demanded of their American correspondents the production of monu-

ments and inscriptions corroborative of the supposed ante-Columbian wanderings of Leif Ericson or Thorfinn Karlsefne, similar to those produced by themselves from Greenland. Nor were the modern Vinlanders less eager to respond. The Rhode Island Historical Society, replying through its learned secretary, did forthwith produce the required inscriptions and memorials: even to the famous "Danish Round Tower" at Newport, which the vulgar had been profane enough to reckon nothing more than an old windmill!

But the most memorable of all the so-called monuments of the Massachusetts Northmen is the famous Assonet or Dighton Rock, on the east bank of the Taunton river: a relic of undoubted value in relation to our present inquiries. It might be assumed with much probability that investigations instituted fully three centuries after the opening up of regular intercourse between Europe and America would fail to recover, in the long-settled New England States, any memorials of colonists of the eleventh or twelfth century, even though such evidence may have been in existence at a time when the Pilgrim Fathers had other things to occupy their thoughts. Anglo-Roman inscriptions, as we know, have been built into the masonry of ancient churches, mediæval strongholds, and even modern farm-houses. It might therefore be assumed that the islanders, who were thus indifferent to the memorials of older British colonists, were not likely, when transplanted to the wilds of the New World, to give heed to graven rocks, or such rudely inscribed runic slabs as Leif Ericson or Thorfinn Karlsefne may have left behind them. Happily, whatever else may be learnt from the Dighton Rock, its history leaves no room for doubt, that if any such memorials existed, they were little likely to be overlooked. In truth, this inscription is scarcely surpassed, in the interest it has excited, or the novel phases of its interpretation at successive epochs of theoretical speculation, by any Perusinian, Eugubine, or Nilotic riddle. When the taste of American antiquaries inclined towards Phœni-

cian relics, the Dighton Rock conformed to their opinions ; and with changing tastes it has proved equally compliant. In 1783 the Rev. Ezra Stiles, D.D., President of Yale College, when preaching before the Governor and State of Connecticut, appealed to their Rock, in proof that the Indians were of the accursed seed of Canaan, and were to be displaced and rooted out by the European descendants of Japhet ! "The Phœnicians," he affirms, "charged the Dighton and other rocks in Narraganset Bay with Punic inscriptions remaining to this day, which last I myself have repeatedly seen and taken off at large, as did Professor Sewell. He has lately transmitted a copy of this inscription to Mr. Gebelin of the Parisian Academy of Sciences, who, comparing them with the Punic palæography, judges them to be Punic, and has interpreted them as denoting that the ancient Carthaginians once visited these distant regions."¹ To this, accordingly, Humboldt refers : "Drawings of them," he says, "have been repeatedly made, but so dissimilar, that it is difficult to recognise them as copies of the same original. Count de Gebelin does not hesitate, with the learned Dr. Stiles, to regard these marks as a Carthaginian inscription. He says, with that enthusiasm which is natural to him, but which is highly mischievous in discussions of this kind, that this inscription has arrived most opportunely from the New World, to confirm his ideas on the origin of nations ; and that it is manifestly a Phœnician monument. A picture in the foreground represents an alliance between the American people and the foreign nation, who have arrived by the winds of the north from a rich and industrious country."² Here, then, are the very materials required. Change but this *Punic* into a *Runic* inscription, and the winds of the north will fit the Scandinavian Icelanders far better than voyagers from the Mediterranean Sea. Humboldt, indeed, throws out the hint in a subsequent paragraph which was ultimately turned to

¹ *Archæologia*, vol. viii. p. 291.

² *Vues des Cordillères*, vol. i. p. 180.

good account. But meanwhile let us retrace the history of this famous inscription.

So early as 1680, Dr. Danforth executed what he characterised as "a faithful and accurate representation." In 1712 the celebrated Dr. Cotton Mather procured drawings of the same, and transmitted them to the Secretary of the Royal Society of London, with a description, printed in the *Philosophical Transactions* for 1714, referring to it as "an inscription in which are seven or eight lines, about seven or eight feet long, and about a foot wide, each of them engraven with unaccountable characters, *not like any known character.*" In 1730, Dr. Isaac Greenwood, Hollisian Professor at Cambridge, New England, communicated to the Society of Antiquaries of London another drawing, accompanied with a description which proves the great care with which his copy was executed. In 1768, Mr. Stephen Sewell, Professor of Oriental Languages at Cambridge, New England, took a careful copy, the size of the original, and deposited it in the Museum of Harvard University; and a transcript of this was forwarded to the Royal Society of London, six years later, by Mr. James Winthrop, Hollisian Professor of Mathematics. In 1786 the Rev. Michael Lort, D.D., one of the vice-Presidents of the Society of Antiquaries of London, again brought the subject, with all its accumulated illustrations, before that learned society;¹ and Colonel Vallery undertook to prove that the inscription was neither Phœnician nor Punic, but Siberian.² Subsequently, Judge Winthrops executed a drawing in 1788. Again we have others by Judge Baylies and Mr. Joseph Gooding in 1790, by Mr. Kendall in 1807, by Mr. Job Gardner in 1812; and finally, in 1830, a Commission appointed by the Rhode Island Historical Society took it in hand, and communicated the results to the Antiquaries of Copenhagen: all of which duly appear in their *Antiquitates Americanae*, in proof of novel and very remarkable deductions.

¹ *Archæologia*, vol. viii. p. 200.

² *Ibid.* p. 302.

Surely no inscription, ancient or modern, ever received more faithful study. After inspecting the rude scrawls of which it chiefly consists, it is pleasant to feel assured of this, at least: that when learned divines, professors, and linguists, thus perseveringly questioned this New England sphinx for upwards of a century and a half, we have good proof that no more valuable inscriptions have been allowed to perish unrecorded. But the most curious matter relating to this written rock is, that after being thus put to the question by learned inquisitors for a hundred and fifty years, it did at length yield a most surprising response. The description given by Professor Greenwood of his own process of copying, and by Professor Winthrop of the method pursued by his colleague, Mr. Sewell,—as well as the assiduity and zeal of other copyists,—would under all ordinary circumstances have seemed to render further reference to the stone itself superfluous. But no sooner do the Danish antiquaries write to their Rhode Island correspondents, with a hint of Leif Ericson and other old Norsemen's New England explorations, than the Dighton Rock grows luminous; and the Rhode Island Commission sends a new drawing to Copenhagen, duly engraved with all the others in the *Antiquitates Americanae*, from which the learned Danes, Finn Magnusen, and Charles C. Rafn,—as indeed the most unlearned of English or American readers may,—discern the name of Thorfinn, with an exact, though by no means equally manifest enumeration of the associates who, according to the Saga, accompanied Karlsefne's expedition to Vinland, in A.D. 1007.

The annals of antiquarian exploration record many marvellous disclosures, but few more surprising than this. One could fancy the learned Dr. Danforth, or the painful Dr. Cotton Mather, responding with the delighted Antiquary, when Lovel,—having, like our Rhode Island Commissioners, ascertained what to look for,—made out on the lintel of Monkbarne's postern the mitre of the venerable Abbot of

Trotcosey: "*See what it is to have younger eyes!*" The inscription, as has been said, is readable by the most unlearned; for, notwithstanding sundry efforts in the pages of the *Antiquitates Americanae* to discover runic characters, the letters which had so surprisingly come out on the oft-copied Dighton Rock, read in tolerably plain Roman capitals: :ORFINS. At the meeting of the American Association for the Advancement of Science, at Albany in 1856, I had an opportunity of inspecting a cast of the rock. No more confused and indistinct scrawl ever tried the eyes of antiquarian seer. Mine proved wholly unable to discern the invaluable holograph of the ancient Norse Columbus. Indeed, the indistinctness of the half-obliterated design, and the rough natural surface of the weathered rock on which the figures have been scratched with the imperfect tools of some Indian artist, abundantly account for the variations in successive versions, as well as for the fanciful additions which enthusiastic copyists have made out of its obscure lines.

Mr. Schoolcraft tested the significance of the inscription, by submitting a copy of it to Chingwauk, an Indian chief, familiar with the native system of picture-writing. The result was an interpretation of the whole as the record of an Indian triumph over some rival native tribe; and the conviction on Mr. Schoolcraft's part that the graven rock is simply an example of Indian rock-writing, or *muzzinnabik*, attributable to the Wabenakies of New England.¹ In the engraving of 1790 an OR appears, which, in 1830, had expanded into Thorfinn, and his fifty-one followers. Those Chingwauk could make nothing of, and hence Mr. Schoolcraft inferred that they were genuine additions, made by the Norsemen to an Indian record. But subsequent inspection of the original satisfied him that the runic or Roman characters are imaginary, and that the whole is of Indian origin: an opinion which General Washington is said to have expressed at Cambridge so early as 1789.

¹ *History of the Indian Tribes*, vol. iv. p. 120, plate 14.

Such is the conviction reluctantly forced on the mind of the most enthusiastic believer in the ante-Columbian discovery and colonisation of New England by the Northmen, in reference to this famous Dighton Rock, after all the fascinating glimpses of an American prehistoric era which the learning of Danish and other antiquaries had conjured up for his behoof. The runic records of the Dighton Rock, it may be presumed, have lost credit with every honest inquirer; not so, however, the traditions of the Northmen, or the faith in the recovery of some more credible memorial of their presence.

One of the latest discoveries of these supposed records of the Northmen was produced before the Ethnological section at the Albany meeting of the American Association, in 1856, by Dr. A. E. Hamlin, of Bangor, and is described in the printed Transactions.¹ The accompanying woodcut (Fig. 105) is copied from the cast, then exhibited, of this

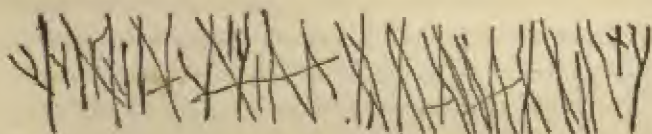


FIG. 105.—Monhegan Inscription.

supposed runic inscription, which appears on a ledge of hornblende, on the Island of Monhegan, off the coast of Maine. Dr. Hamlin suggests that it is the work of "some illiterate Scandinavian, whose knowledge of the runic form was very imperfect;" and he then proceeds to adduce reasons for assigning Monhegan, the Kennebec River, and Merry Meeting Bay, as the true localities of Leif's wintering place in Vinland, instead of the previously assumed Pacasset River and Mount Hope Bay. Dr. Hamlin, however, duly forwarded a copy of the inscription to Copenhagen; and a version of it appears in the *Séance Annuelle du 14 Mai*

¹ *Proceedings of the American Association for the Advancement of Science, 1856. Philology and Ethnology, p. 214.*

1859, bearing a very remote resemblance to the accompanying engraving of it, and looking a great deal liker runes than the original can possibly do. The Danish antiquaries on this occasion, however, abandoned the attempt at interpretation; though there is something amusing in the contrast between the New Englander's theory of an illiterate Norseman scrawling incomprehensible runic characters on the rock, and that of the Danish elucidator's assumption that "The Indians have, without doubt, profited in various ways by their intercourse with the Northmen, to whom they were probably indebted for much knowledge; and it is apparently to their instruction, acquired in this manner, that we owe several of their sculptures on the rocks which are met with in these regions."¹ The Monhegan inscription, thus bandied about between illiterate Northmen and Indians, is in irregular lines about six inches long, and runs obliquely across the face of a rock, where the general lines of horizontal stratification presented no impediment to its characters being placed in the usual upright position. It is just as truly a record in Scandinavian runes as that of the Dighton Rock. When properly classed, it will more probably take its place with the famous Swedish Runamo inscription, which, after its characters had been interpreted with wonderful minuteness, turned out to be only the natural markings on a block of granite.

The "Grave Creek Stone," to the elucidation of which Mr. Schoolcraft specially devoted himself, may be regarded as another, though very different result of the publication of the *Antiquitates Americanae*. In the year 1838, soon after its publication, the Grave Creek mound, on the banks of the Ohio River, was excavated by its proprietor, and converted into an exhibition. This mound is one of the largest on the continent, and its genuine characteristics are such as stand in no need of adventitious aid to confer a legitimate interest. But along with the shell-beads, copper

¹ *Société Royale des Antiquaires du Nord*, 1859, p. 25.

bracelets, and other relics common to *ancient* sepulchral mounds, which were recovered in the course *of* excavation, an inscribed oval disk of white sandstone—engraved here, the same size, from a wax impression of *the* original,—was produced as having been found near *one* *of* the skeletons at the base of the mound. Of its genuineness Mr. Schoolcraft

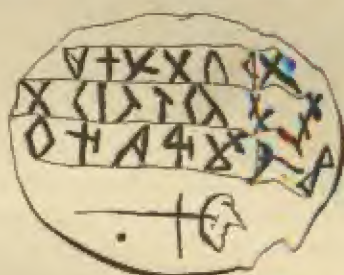


FIG. 100.—Grave Creek Mound *inscription*.

entertained not the slightest doubt; nor can he be considered unreasonably mysterious in *the* indications vouchsafed by him as to its ancient source. After corresponding with Professor Rafn of Copenhagen, M. Jomard of Paris, and other foreign and native scholars, he communicated to the American Ethnological Society an elaborate analysis of the inscription.¹ In this he shows *that* the cosmopolitan little disk of sandstone contains twenty-two alphabetic characters, four of which correspond *with* the ancient Greek, four with the Etruscan, five with *the* old Northern runes, six with the ancient Gaelic, seven *with* the old Erse, ten with the Phœnician, fourteen with *the* Anglo-Saxon,—or old British as it is somewhat oddly designated,—and sixteen with the Celtiberic; besides which, he adds, “possibly equivalents for these characters may be found in the old Hebrew:” a suggestion designed, *in* *doubt*, for those who may still have faith in the descent *of* *the* Red Men from the lost ten tribes. It thus appears *that* this ingenious little stone is even more accommodating *than* the Dighton Rock,

¹ *Transactions of the American Ethnological Society*, vol. i. p. 392.

in adapting itself to all conceivable theories of ante-Columbian colonisation ; and in fact constitutes an epitome of the prehistoric literature of the New World. Had Sir Henry Rawlinson dug up such a medley of languages at one of the corners of the tower of Babel it might have less surprised us.

This curious analysis, so contrary to all previous philological experience, does not seem to have staggered the faith of the elucidator. That a series of simple linear alphabetic figures should be found to present certain analogies to runic and other alphabets, including even the cuneiform characters on the Assyrian marbles, will not surprise any one who has made for himself the easy experiment of trying to invent a new series of combinations of lines and curves differing from such alphabets. But apart from internal evidence, the fact is notorious that Dr. James W. Clemens communicated to Dr. Morton all the details of the exploration of the Grave Creek mound, which appear in the *Crania Americana*, without reference to any such discovery. Nor was it till the excavated vault had been fitted up by its proprietor for exhibition to all who cared to pay for the privilege of admission, that the marvellous inscription opportunely came to light to add to the attractions of the show. Nevertheless, Mr. Schoolcraft's faith remained unchanged ; and after raising the question of Phœnician, Iberian, Danish, or Celtic origin in his first paper on the subject, he thus summed up his matured views, in his *History of the Indian Tribes* :—"An inscription in apparently some form of the Celtic character came to light in the Ohio Valley in 1838. This relic occurred in one of the principal tumuli of Western Virginia (the ancient *Huitramannaland*). It purports to be of an apparently early period, viz., 1328. It is in the Celtiberic character, but has not been deciphered. Its archaeology appears corroborative of the Cimbrian and the Tuscarora traditions, representing a white race in the ante-Columbian periods in this part of America."¹

¹ *History of the Indian Tribes*, vol. iv. p. 118.

The genius of archæology might well lavish her favours more liberally on votaries who make so much out of her smallest contributions. The parenthetical introduction of Professor Rafn's *Hvitramannaland* is a fine example of rhetorical allusion.¹ The unhesitating determination of the inscription as in "*the Celtiberic character*" wonderfully simplifies previous alternatives; and it could never be surmised from his text, that the historian of the Indian Tribes assigned his precise date of 1328 on no better authority than the statement of Mr. Tomlinson, the proprietor of the mound, that the section of a large white oak on its summit disclosed about five hundred annual rings; which, supposing the oak to have taken root the very year of the mound's completion, and the rings to have been exactly the product of five centuries, would indicate the said date. But such alphabetic marvels were hailed with rapture by the wondering *savants* to whom they were submitted. The antiquaries of Copenhagen published a description of this "Runic inscription found in America;" hesitated as to its authors between "tribes from the Pyrenean Peninsula," and inhabitants of the British Isles; but apologised for qualifying with any possibility of doubt the certainty as to its being "of European origin, and of a date anterior to the close of the tenth century," because the European alphabets with which they had compared it are themselves of a more ancient Asiatic origin. They added, moreover, the somewhat dangerous hope, "that the numerous amateurs of antiquity in America may continue to exert themselves for the discovery of more monuments of such high value."²

Ancient European, then, the Virginian inscription is, unless it be still more ancient Asiatic. But Africa, too,

¹ In the sketch of the discovery of America by the Northmen already referred to, Professor C. C. Rafn adds:—"The Northmen were also acquainted with American land still farther to the south, called by them *Hvitramannaland* (the land of the White Men), or *Ísland it Mikla* (Great Ireland). The exact situation of this country is not stated; it was probably North and South Carolina, Georgia, and Florida."

² *Mémoires de la Société Royale des Antiquaires du Nord*, 1840-44, p. 127.

has its champions. M. Jomard, President of the Geographical Society of Paris, pronounced the riddle to be Libyan; and his opinion has since met with independent confirmation. Mr. William B. Hodgson, formerly American Consul at Tunis, in his *Notes on Northern Africa*,¹ after discussing the vestiges of the ancient Libyan languages, and noticing certain Numidian inscriptions found at the oasis of Ghraat and elsewhere: proceeds to comment on the Grave Creek stone as "an inscription found in the United States, and containing characters very similar to the



FIG. 107.—Pemberton Inscribed Stone Ass.

Libyan;" and after detailing the discoveries in the mound, including, as he assumes, ivory, he arrives at the comprehensive conclusion that "The peopling of America is quite as likely to be due to Africa and Europe as to Asia."

The Virginian inscription is not, however, the sole example of graven characters found on the American continent in connection with native antiquities. Dr. G. J. Farish of Nova Scotia has sent me the facsimile of an inscription engraved in unknown alphabetic signs on a quartzose rock, near the beach, at Yarmouth Bay, which he

¹ *Notes on Northern Africa, the Sahara and Soudan, in relation to the Ethnography, Languages, etc., of those Countries*, p. 44.

assures me has been known for upwards of forty-five years, and repeatedly submitted to scholars in the hope of finding an interpreter. In 1859, Dr. John C. Evans of Pemberton, New Jersey, communicated to the American Ethnological Society an account of an inscribed stone axe recently ploughed up on a neighbouring farm. The axe measures about six inches long by three and a half broad, and is of a form altogether unusual among American stone implements. It is engraved here (Fig. 107), from a drawing furnished to me by Dr. Evans. Dr. E. H. Davis, after carefully examining the original, informs me that though the graven characters have been partially retouched in the process of cleaning it, their

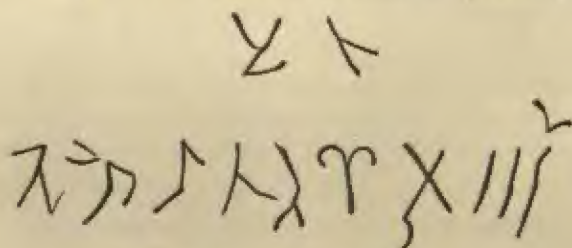


FIG. 108.—Pemberton Axe Inscription.

edges present an appearance of age consistent with the idea of their genuineness. Two of the characters are placed on one side, in the groove for the handle, the others apparently form a continuous line, running round both sides of the axe-blade, as extended here (Fig. 108). If this engraved axe be genuine, it is not an altogether unique example. The practice of decorating implements of the simplest forms with graven and hieroglyphic characters has already been illustrated in one of the Carib shell-knives (Fig. 48) from Barbadoes.¹ Humboldt figures, in his *Vues des Cordillères*, a hatchet made of a compact feldspar passing into true jade (Fig. 109), obtained by him from the Professor of Mineralogy in the School of Mines at Mexico, with its surface covered with

¹ *Ante*, vol. i. p. 123.



FIG. 109.—Engraved Aztec Hatchet.

graven figures or characters. Such devices probably indicate the dedication of the weapon or implement to some special and sacred purpose, such as the rites of Mexican sacrifice rendered so common. In commenting on this interesting relic, M. Humboldt adds: "Notwithstanding our long and frequent journeys in the Cordilleras of the two Americas, we were never able to discover the jade *in situ*; and this rock being so rare, we are the more astonished at the great quantity of hatchets of jade which are found on turning up the soil in localities formerly inhabited, extending from the Ohio to the mountains of Chili."¹

No relics are so fascinating in their promised disclosures of the past, or so justly entitled to value, as those graven with inscriptions, even in unknown characters. The sole literate remains of Pelasgic Italy, found at *Ægylla* in Southern Etruria, do not greatly exceed in amount these reputed relics of America's forgotten tongues. Dennis gives a list of some thirty-six or thirty-seven words as the extreme limits of our knowledge of the Etruscan language. Even the precise value of its alphabet is not wholly determined; and the solitary inscription on the Perusinian pillar has supplied the chief materials for such linguistic inductions relative to the ancient Rasena, as the Eugubine tablets have done for the Umbrian. But the scratching of a few linear characters on a disc or axe-head of stone is so easily accomplished, that the genuineness of such relics cannot be too jealously scrutinised. The doubt and confusion introduced into ethnographic inquiries by a single forgery are mischievous; but happily for science, the knowledge of the culprit is generally on a par with his morality.

Of another class of mound-disclosures, which gather their chief marvels under the light of modern eyes, one figured and described by Mr. Schoolcraft, in the *American Ethnological Transactions*, opens up, with the help of its ingenious

¹ *Vues des Cordillères*, vol. ii. p. 146, plate xxviii.

interpreter, glimpses of ante-Columbian science, and of comprehensive significance in its graven devices, not less surprising than the polyglot characters of the Grave Creek Stone. Having undertaken to treat, by an exhaustive process, "the Grave Creek Mound, the antique inscription discovered in its excavation, and the connected evidences of the occupancy of the Mississippi Valley during the Mound period, and prior to the discovery of America by Columbus," he introduces this subsidiary relic (Fig. 110), as a "figured stone sphere, an antique globe, the most important discovery in the minor mounds in its bearing on the inscription." It is a spherical stone, flattened on one side, and with no further characteristic of a globe about it than pertains to any schoolboy's marble. Sundry lines graven on it, as shown in the woodcut, form a lozenge, triangle, etc., suggesting no special appearance of art or mystery to the uninitiated eye. But here is what can be made of them, by one whose fancy has been stimulated to the degree requisite for interpreting their esoteric teachings:—"The



FIG. 110.—Graven Stone Sphere.

stone, which is a sphere, measures $4\frac{5}{16}$ inches in circumference. The inscription lines are enclosed in a circle of $\frac{8}{10}$ ths; they are accompanied by a single alphabetic sign. It is the Greek Delta, which is also the letter τ or ρ in several of the ancient alphabets. This character is also the letter Υ , in the Icelandic Runic representing the god Υ , or a bull.

On the assumption that this inscription is geographical, it may be inquired whether it is a figure of the globe, denoting the divisions of land and water, or a minor portion of it. The ancients did not believe the world to have a spherical shape. Either the stone, therefore, is of an astronomical character; or is of a date subsequent to Copernicus; or it evinces that he was anticipated in the theory of convexity

by the ancient Americans.”¹ This inscribed stone sphere has attracted little attention compared with the “Grave Creek Stone;” but if the above alternatives logically exhaust the choice of inferential truths, it is surely the more marvellous relic of the two!

A like process is pursued with sundry other Mound relics. A stone ornamented with a simple pattern of alternate circles and squares, becomes a “heraldic record.” “It may be regarded, perhaps, as astrological and genealogical, and as such, a memorial or species of arms of a distinguished person or family.” Again, among several perforated cylinders of soft steatite, found in one of the mounds, there occurred a tube twelve inches long. This forthwith becomes a “telescopic device.” The bore, which is four-fifths of an inch in diameter, diminishes at one end abruptly to one-fifth. “By placing the eye at this diminished point, the extraneous light is shut from the pupil, and distant objects are more clearly discerned. The effect is telescopic, and is the same which is known to be produced by directing the sight to the heavens from the bottom of a well, an object which we now understand to have been secured by the Aztec and Maia races, in their astronomical observations, by constructing tubular chambers.”²

Sober after-thought has led the antiquaries of Rhode Island so thoroughly to reject their older faith in the ante-Columbian relics of that district attested by the Copenhagen authorities, that not only the Dighton Rock is in danger of being undervalued: but the famous Round Tower of Newport is unduly slighted, now that sceptics have robbed it of some six centuries of its reputed age. As a genuine American ruin of former generations, this old Tower forms an exceedingly attractive feature on Newport common; and the historical and poetical associations which have been ascribed to it by no means diminish its interest. When the

¹ *American Ethnological Transactions*, vol. i. p. 405.

² *Ibid.* vol. i. p. 406.

Danish antiquaries were in search of relics of the long-lost Vinland, drawings of the Tower were despatched to them, and its authentication as an architectural monument of the Norse colonists of New England was unhesitatingly set forth in the supplement to the *Antiquitates Americanae*.¹ The poet Longfellow, accordingly, assuming its venerable origin, associated it with another discovery of so-called Norse relics, and made it the scene of his ballad of *The Skeleton in Armour*. But the modern Skald is not the less satisfied, for all purposes of sober prose, with the date of 1678, furnished by the will of Governor Arnold for his "stone-built windmill in ye town of Newport."

In the able and well digested *résumé* of American archæology, prepared by Mr. Samuel F. Haven for the Smithsonian Institution, reference is made to sundry other inscriptions of doubtful import. Among these "The Alabama Stone" is an innocent piece of blundering, not without its significance. It was discovered near the Black Warrior river, upwards of fifty years ago, when no rumours of the old Northmen's visits to Vinland or Huitramannaland stimulated the dishonest zeal of relic-hunters; and its mysterious language, and remote ante-Columbian date, were only wondered at as an inexplicable riddle. As copied by its original transcribers, the inscription ran thus :—

HISENEHNDREV.

1232.

Had it turned up opportunely in 1830, when the antiquaries of New England were in possession of a roving commission on behalf of Finn Magnusen and other Danish heirs and assignees of old Ari Marson, who knows what might have been made of so tempting a morsel? From the *Annales Flateyenses*, we learn of "Eric Grœnlandinga biskup," who in A.D. 1121 went to seek out Vinland; and in the following century, the *Annales Holenses*, recovered by Torfæus from

¹ *Antiquitates Americanae*, Supplement, p. 18.

the episcopal seat of Holum in Iceland, supply this tempting glimpse: "*faunst nyja land*," i.e. new land is found. With such a hint, what might not learned ingenuity have done to unriddle the mysteries of the New World in the year of grace 1232? Unhappily its fate has been to fall into the hands of Mr. Haven for literary editing, which he does in this unromantic fashion:—"We have before us the Alabama Stone found some thirty years ago near the Black Warrior river. To our eyes, it reads HISPAN · ET · IND · REX as plainly as the same inscription on a Spanish quarter of a dollar somewhat worn. The figures may be as above represented, but of course they cannot be intended for a date," unless indeed it be 1532. Earlier dates occur on genuine inscribed memorials of the old Spanish Hidalgos' presence in the New World, of which the Manlius Stone is perhaps the most interesting, on account of the locality where it was found.

This stone was discovered about the year 1820, in the township of Manlius, Onondaga County, New York, by a farmer, when gathering the stones out of a field on first bringing it into culture. It is an irregular spherical boulder about fourteen inches in diameter, now deposited in the museum of the Albany Institute. On one side, which is smooth and nearly flat, is the inscription:

Leo . De	L . . 11
vi. 1520	X

with the device of a serpent twining round the branch of a tree. Like most other American relics of this class, it has been tortured into interpretations not very easily deducible by any ordinary process of rendering such simple records.¹ Apart, however, from any attempted identification of the object of the memorial, an inscription of a date within twenty-eight years of the first landing of Columbus on the mainland, if only genuine, has a legitimate charm for the

¹ Schoolcraft's *Notes on the Iroquois*, p. 325. *Proceedings of American Antiq. Soc.*, April 1863, p. 33; &c.

American archæologist. But no more can be made of it than the date; and a discovery of this nature, associated with the earliest known period of European exploration of the American continent, in a northern locality so remote from the sea-coast, when taken into consideration along with the authentic traces of older Norse settlements still discoverable in Greenland, only serves to confirm the doubts of any Scandinavian colonisation of Vinland in the ages before Columbus. That the Northmen visited some portions of the American coasts appears to be confirmed by credible testimony. But, if so, their presence was transient; they left no enduring evidence of their visits; and to Spanish pioneers of American discovery and civilisation, subsequent to the era of Columbus, we must look for the earliest memorials of European adventure in the New World.

CHAPTER XX.

THE AMERICAN TYPE.

THE RACE OF GUANAHANE—FIRST INDIANS IN EUROPE—A DISTINCT RACE OF MEN—VIEWS OF DR. MORTON—THE INDIAN SKULL—THE AMERICAN CRANIAL TYPE—EXCEPTIONAL VARIETIES—VIEWS OF AGASSIZ—MORTON'S BARBAROUS NATIONS—OTHER OBSERVERS—CANADIAN CRANIA—DEVIATIONS FROM NORMAL TYPE—SCIOTO MOUND SKULL—SOURCE OF FORM—HURON SKULL—CHEROKEE HEAD-FORM—COMPARISON OF FORMS—ELEMENTS OF CONTRAST—GRAVE CREEK MOUND SKULLS—ROCK BLUFF SKULL—A SUBJECT RACE—MOUND AND CAVE CRANIA—THE PERUVIANS AND MEXICANS—PERUVIAN SEPULTURE—A PERUVIAN TOMB—MALE MUMMY—FEMALE MUMMY—THE MANSO COLORADO—SEPULCHRAL BELICS—INFANT MUMMIES—HAIR CHARACTERISTICS—PERUVIAN HEAD-FORMS—RELATIVE CEREBRAL CAPACITY—PERUVIAN BRACHYCEPHALIC CRANIA—NATURAL SELECTION—DR. MORTON'S VIEWS—PREVALENCE OF DISTORTION—TITICACA SKULLS—SANTA CHILD'S SKULL—DIVERSE ETHNICAL TYPES—ELEMENTS OF DIFFERENCE—ARTIFICIAL COMPRESSION—PERUVIAN INFANT SKULLS—MODIFIED FORMS—COMPARATIVE MEASUREMENTS—THE ANOMALOUS HEAD—PERUVIAN DOLICHOCERPHALIC CRANIA—EMBALMED HEAD—PERUVIAN SURGERY—ORIGIN OF EMPALMING—SOURCES OF EVIDENCE—GEOGRAPHICAL PHASES OF CIVILIZATION—MEXICAN DOLICHOCERPHALIC CRANIA—MEXICAN BRACHYCEPHALIC CRANIA—THE TOLTECAN FAMILY—PREDOMINANT HEAD-FORMS—THE NORTHERN TYPE—THE THEORETICAL TYPE—IROQUOIS AND ALGONQUINS—THE ALGONQUIN STOCK—DOLICHOCERPHALIC DIVISION—UNSTABLE CONDITIONS OF LIFE—CANADIAN CRANIA—SIGNIFICANCE OF OCCIPITAL FORMS—VARIATIONS IN THE SEXES—THE QUANEDOTE—THE HURON HEAD-FORM—HURON MALE CRANIA—HURON FEMALE CRANIA—EXTREME HEAD-FORMS—DIVERSE EVIDENCE—THE IROQUOIS STOCK—ALGONQUIN CRANIA—NEW ENGLAND CRANIA—NATICK INDIANS—ALGONQUIN AND LENAPE TRIBES—DIVERSITIES OF PHYSICAL CHARACTER—THE WENOMINETS—THE ESQUIMAUX HEAD—ELEMENTS OF COMPARISON—THE TCHUKTCHI HEAD—ESQUIMAUX CRANIA—THE ESQUIMAUX HEAD—TCHUKTCHI CRANIA—THE ESQUIMAUX AREA—MEAN CRANIAL MEASUREMENTS—RESULTS OF COMPARATIVE ANALYSES—A PERSISTENT IDEA—RESULTS OF ANALYSES—AMERICAN ETHNIC UNITY—OPINIONS OF OBSERVERS—THE MONGOLIAN ETHNIC CENTRE.

THE unsuccessful search after traces of ante-Columbian intercourse with the New World, suffices to confirm the belief that, for unnumbered centuries, the Western Hemisphere had remained the exclusive heritage of nations

native to its soil. Its sacred and sepulchral rites, its usages and superstitions, its arts, letters, metallurgy, sculpture, and architecture, are all peculiarly its own; and we must now direct our attention to the physical characteristics which mark the American type of man, with a view to ascertain what truths may be recoverable from that source, relative to the origin, mutual influences, or essential diversities, pertaining to the civilised and barbarous races of the continent.

Among the various grounds on which Columbus founded his belief in the existence of a continent beyond the Atlantic, special importance was attached to the fact that the bodies of two dead men had been cast ashore on the island of Flores, differing essentially in features and physical characteristics from any known race. When at length the great discoverer of the Western World had set his foot on the islands first visited by him, the peculiarities which marked the gentle and friendly race of Guanahanè were noted with curious minuteness; and their "tawny or copper hue," their straight, coarse, black hair, strange features, and well-developed forms, were all recorded as objects of interest by the Spaniards. On his return, the little caravel of Columbus was freighted not only with gold and other coveted products of the New World, but with nine of its natives, brought from the islands of San Salvador and Hispaniola; eight of whom survived to gaze on the strange civilisation of ancient Spain, and to be themselves objects of scarcely less astonishment than if they had come from another planet. Six of these representatives of the western continent, who accompanied Columbus to Barcelona where the Spanish court then was, were baptised with the utmost state and ceremony, as the first-fruits offered to Heaven from the new-found world. Ferdinand and Isabella, with the Prince Juan, stood sponsors for them at the font; and when, soon after, one of them, who had been retained in the prince's household, died, no doubt as to their common humanity

marred the pious belief that he was the first of his nation to enter heaven.

Such was the earliest knowledge acquired by the Old World of the singular type of man generically designated the Red Indian; and the attention which its peculiarities excited, when thus displayed in their fresh novelty, has not yet exhausted itself, after an interval of upwards of three centuries and a half. That certain special characteristics in complexion, hair, and features, do pertain to the whole race or races of the American Continent, is not to be disputed. Ulloa, who spent ten years in the provinces of Mexico, Columbia, and Peru, says: "If we have seen one American, we may be said to have seen all, their colour and make are so nearly alike."¹ Remarks involving the same idea have been recorded by other travellers: and have been reproduced, with a comprehensive application undreamt of when they were uttered. In the sense in which Ulloa gave utterance to his impressions relative to the tribes now occupying the tropical regions of the continent, of which alone he spoke from personal observation, there is nothing in them specially to challenge; but that which was originally the mere generalisation of a traveller, has been quoted as though it involved an unquestionable dogma of science. Various causes, moreover, have tended to encourage the development of scientific theory in the same direction; so that, with the exception of the Esquimaux, the universality of certain physical characteristics peculiar to the tribes and nations of America, has been assumed by American ethnologists as an absolute postulate for the strictest purposes of scientific induction; and reaffirmed dogmatically, in the words of Ulloa: "*He who has seen one tribe of Indians, has seen all.*"

An idea which embraces in a simple form the solution of many difficulties, is sure to meet with ready acceptance. This one, accordingly, which affirms certain homogeneous physical characteristics to be constant throughout the American races, was adopted, for the most part, without

¹ *Chronica del Peru*, parte i. c. 19.

inquiry ; and opinions based on its assumption have been reproduced in confirmation of its truth. "There is no proof," says Humboldt, in the introduction to his *Researches*, "that the existence of man is much more recent in America than in the other hemisphere. . . . The nations of America, except those which border on the polar circle, form a single race, characterised by the formation of the skull, the colour of the skin, the extreme thinness of the beard, and straight glossy hair." But this statement has been reproduced to sustain views which the accompanying remarks of the scientific traveller entirely contradict ; for, as will be afterwards noted, in the very next sentence Humboldt dwells on the striking resemblance which the American race bears to the Asiatic Mongols, and refers to transitional cranial characteristics which constitute links between the two.

With a singular unanimity, American writers, including the highest authorities in ethnology, have concurred in the opinion that the nations of the whole American continent, north and south, with the solitary exception of the Esquimaux, constitute one nearly homogeneous race, varying within very narrow limits from the prevailing type ; and agreeing in so many essentially distinctive features, as to prove them a well-defined species of the genus *Homo*. Lawrence, Wiseman, Agassiz, Squier, Gliddon, Nott, and Meigs, might each be quoted in confirmation of the prevailing uniformity of certain strongly-marked cranial characteristics ; but the source of all such opinions is the justly distinguished author of the *Crania Americana*, Dr. Morton of Philadelphia. His views underwent considerable modification on points relating to the singular conformation observable in certain ancient skulls, especially in reference to the influence of artificial means in perpetuating changes from the normal type ; but his latest opinions all tended to confirm his original idea of universal approximation to one type. A greatly extended series of Peruvian crania is thus clearly defined : "I at first found it difficult to conceive that the original rounded skull of the Indian could

be changed into this fantastic form, and was led to suppose that the latter was an artificial elongation of a head remarkable for its length and narrowness. I even supposed that the long-headed Peruvians were a more ancient people than the Inca tribes, and distinguished from them by their cranial configuration. In this opinion I was mistaken. Abundant means of observation and comparison have since convinced me that all these variously-formed heads were originally of the same rounded shape." In his posthumous paper on "The Physical Type of the American Indians," based on evidence accumulated in the interval of twelve years which elapsed between the publication of the *Crania Americana* and his death, his matured views are thus defined: "The Indian skull is of a decidedly rounded form. The occipital portion is flattened in the upward direction, and the transverse diameter, as measured between the parietal bones, is remarkably wide, and *often exceeds the longitudinal line.*¹ The forehead is low and receding, and rarely arched, as in the other races,—a feature that is regarded by Humboldt, Lund, and other naturalists, as a characteristic of the American race, and serving to distinguish it from the Mongolian. The cheek-bones are high, but not much expanded; the maxillary region is salient and ponderous, with teeth of a corresponding size, and singularly free from decay. The orbits are large and squared, the nasal orifice wide, and the bones that protect it arched and expanded. The lower jaw is massive, and wide between the condyles; but, notwithstanding the prominent position of the face, the teeth are for the most part vertical."² The views thus set forth by him who has been

¹ In this statement Dr. Morton would seem to have had in view his theoretical type, rather than the results of his own observations, unless he accepted as evidence the artificially abbreviated and flattened skulls; and even of these his *Crania Americana* furnishes only one example, from a mound on the Alabama river (plate liv.) "It is flattened on the occiput and on frontis in such manner as to give the whole head a sugar-loaf or conical form, whence also its great lateral diameter, and its narrowness from back to front."

² "Physical Type of the American Indians," Schoolcraft's *History of the Indian Tribes*, vol. ii. p. 316.

justly designated "the founder of the American School of Ethnology," have been maintained and strengthened by his successors; and until very recently scarcely any point in relation to ethnographic types was more generally accepted as a recognised postulate, than this approximative cranial uniformity of the whole American race.

The comprehensive generalisation thus set forth on such high authority, has exercised an important influence on subsequent investigations relative to the aborigines of the New World. It was accepted with such ready faith as a scientific postulate, that Agassiz, Nott, Meigs, and other distinguished physiologists and naturalists, have reasoned from it as one of the few well-determined data of ethnological science. It no less effectually controlled the deductions of observant travellers. Mr. Stephens having submitted to Dr. Morton the bones rescued by him from an ancient grave among the ruins of Tioul, "so crumbled and broken, that in a court of law their ancient proprietor would not be able to identify them," he succeeded in piecing together, out of the broken fragments, the posterior and lateral portions of the skull; and from these imperfect data pronounced it to be that of a female, presenting "the same physical conformation which has been bestowed with amazing uniformity upon all the tribes on the continent, from Canada to Patagonia, and from the Atlantic to the Pacific Ocean."¹ Some of Mr. Stephens' own personal observations pointed, as we have seen, to a very different conclusion; but he resigned his judgment to this scientific dogma, and accepted it as conclusive proof that the ruins he had been exploring are the work of elder generations of the same Indians who now, miserable and degraded, cling around their long-deserted sites.

Apart from its bearing on the question of the indigenous origin of the American race as an essentially distinct species in the genus *Homo*, this idea of a nearly absolute

¹ *Types of Mankind*, p. 87.

² *Stephens' Travels in Yucatan*, vol. i. p. 284.

homogeneity pervading the tribes and nations of the Western Hemisphere, through every variety of climate and country, from the Arctic to the Antaretic circle, is so entirely opposed to the ethnic phenomena witnessed in other quarters of the globe, that it is deserving of the minutest investigation. It is, indeed, admitted by Morton that the agreement is not absolute; and a distinction is drawn by him, and to some extent recognised and adopted by his successors, between the "barbarous or American," and the "civilised or Toltecan," tribes. Accordingly, one of the three propositions with which Dr. Morton sums up the results deduced from the mass of evidence set forth in his *Crania Americana* is, "That the American nations, excepting the polar tribes, are of one race and one species, but of two great families, which resemble each other in physical, but differ in intellectual character."¹ But the distinction is manifestly not an ethnical one. An essential difference in physical type is indeed recognised as separating the Esquimaux from the true American autochthones; but any physical difference between the remaining two great families is expressly denied.

Other differences, or varieties, recognised among the tribes of North and South America, have been acknowledged; but only in such a manner as to harmonise with Morton's postulate of one American type; and to confirm the assumption of man's indigenous origin among the fauna peculiar to the Western Hemisphere. Agassiz, when alluding to the conflicting opinions maintained by zoologists as to the number of species into which the genus *Cebus* is divisible, remarks: "Here we have, with reference to one genus of monkeys, the same diversity of opinion as exists among naturalists respecting the races of man. But in this case the question assumes a peculiar interest, from the circumstance that the genus *Cebus* is exclusively American; for that discloses the same indefinite limitation between its species which we observe also among the tribes of Indians,

¹ *Crania Americana*, p. 260.

or the same tendency to splitting into minor groups, running really one into the other, notwithstanding some few marked differences: in the same manner as Morton has shown that *all the Indians constitute but one race*, from one end of the continent to the other. This differentiation of our animals into an almost indefinite number of varieties, in species which have, as a whole, a wide geographical distribution, is a feature which prevails very extensively upon the two continents of America. It may be observed among our squirrels, our rabbits and hares, our turtles, and even among our fishes; while in the Old World, notwithstanding the recurrence of similar phenomena, the range of variation of species seems less extensive, and the range of their geographical distribution more limited. In accordance with this general character of the animal kingdom, we find likewise that, among men, with the exception of the Arctic Esquimaux, there is only one single race of men extending over the whole range of North and South America, but dividing into innumerable tribes; whilst, in the Old World, there are a great many well-defined and easily distinguished races, which are circumscribed within comparatively much narrower boundaries."¹

Such is the argument by which this distinguished American naturalist sought to harmonise the theory of Morton with seemingly irreconcilable facts; and thereby to confirm his idea of a complete correspondence between the circumscribed areas of the animal world and the natural range of distinct types of man. The difficulties arising from admitted physical differences in the one American race, have been solved by other writers who hold to this indigenous unity, by such gratuitous assumptions as that advanced by Mr. Gliddon, that "in reality these races originated in *nations*, and not in a single pair; thus forming proximate, but not identical species."² In spite of such theories, however, the irreconcilable variations from any

¹ *Indigenous Races of the Earth*, p. xiv.

² *Types of Mankind*, p. 276.

assumed normal type could not be altogether ignored; and this difficulty was repeatedly glanced at, though never fairly grappled with, by any of the writers of "the American School of Ethnology." The closest approximation to a recognition of the legitimate deduction from such contrasting cranial characteristics, is made by Dr. Morton himself, when—overlooking, as I conceive, the true cause,—he remarks, in reference to the larger cerebral capacity of the Indian in his savage state, than of the semi-civilised Peruvian:—"Something may be attributed to a primitive difference of stock, but more, perhaps, to the contrasted activity of the two races."

Whilst, however, this supposed unity in physical form is so strongly asserted throughout the writings of Dr. Morton, and has been accepted and made the basis of many comprehensive arguments dependent on its truth: its originator was not unaware that it was subject to variations of a very marked kind, although he did not allow them their just weight when summing up the results of his carefully accumulated data. He specially notes in his *Crania Americana* "that the nations east of the Alleghany Mountains, together with the cognate tribes, have the head more elongated than any other Americans." But this admission is qualified by the assertion that "even in these instances the characteristic truncature of the occiput is more or less obvious," and after noticing in detail both illustrations and exceptions, he thus concludes:—"In fact, the flatness of the occipital portion of the cranium will probably be found to characterise a greater or less number of individuals in every existing tribe from Tierra del Fuego to the Canadas."¹ This idea of one predominant cranial type is still more strongly advanced in his most matured views, where he affirms the American race to be essentially separate and peculiar, and with no obvious links, such as he could dis-

¹ *Crania Americana*, p. 65; *Physical Type of the American Indians; History of Indian Tribes*, vol. ii. p. 317.

cern, between them and the people of the Old World, but a race distinct from all others.

Following in the footsteps of the distinguished Blumenbach, Dr. Morton has the rare merit of having laboured with patient zeal and untiring energy, to accumulate and publish to the world the accurately observed data which constitute the only true basis of science. His *Crania Americana* is a noble monument of well-directed industry; and the high estimation in which it is held, as an accurate embodiment of facts, has naturally tended to give additional weight to his deductions. But it is obvious that his mind dwelt too exclusively on one or two of the leading characteristics, more or less common, amid many equally important variations in American crania; and the tendency of his final views was to regard the most marked distinctions in American crania as mere variations within narrow limits, embraced by the common and peculiar type which he recognised as characteristic of the whole continent, both north and south. In this opinion his successors not only concurred, but they have attached even less importance to the variations noted by his careful eye. Since his death his greatly augmented collection has been deposited in the Cabinet of the Academy of Natural Sciences of Philadelphia, and his catalogue has been carefully edited and extended under the care of Dr. J. Aitken Meigs. The rearrangement and classification led to no change in the inferences deduced from this valuable accumulation of evidence; and, in a later publication, Dr. Meigs remarked: "Through the *Crania Americana*, it has long been known to the scientific world that a remarkable sameness of osteological character pervades all the American tribes, from Hudson's Bay to Tierra del Fuego."¹

Such, then, is the opinion arrived at by Dr. Morton, as the result of extensive study and observation, accepted or confirmed by his successors, and made the starting-point from whence to advance to still more comprehensive con-

¹ *Cranial Characteristics of the Races of Men; Indigenous Races*, p. 332.

clusions. That it was accepted as an established point, from which to reason as a scientific axiom, is shown by the use made of it by Agassiz, Nott, and other American writers of the highest authority, including the editor of Dr. Morton's catalogue of *Crania*. When unexpected opportunities, consequent on my own settlement in Canada, enabled me to investigate for myself the physical characteristics of the American races, I entered on the inquiry in the full anticipation of meeting with such evidences of a general approximation to the assigned cranial type as would confirm the deductions of previous observers. My chief aim, indeed, when first exploring some of the Indian cemeteries in Canada, was to acquire specimens of skulls approximating to the peculiar brachycephalic type of one important class of early Scottish graves. It was, accordingly, with a sense of disappointment that, after repeated explorations in different localities, I obtained a collection of Canadian crania, which, though undoubtedly Indian, exhibited little or no traces of the compressed form, with short longitudinal diameter, so strikingly apparent in ancient Mexican and Peruvian skulls, and in the rare examples recovered from mounds of the Mississippi Valley. Slowly the conviction forced itself upon me, that to whatever extent this assigned form of head may prevail in other parts of the continent, the skulls most frequently met with along the north shores of the great lakes are deficient in some of its most essential elements. Similar conclusions are indicated by Dr. Latham, when comparing the Esquimaux and American Indian forms of skull, as determined by Dr. Morton;¹ and are no less strongly affirmed by Dr. Retzius, who states that it is scarcely possible to find a more distinct separation into dolichocephalic and brachycephalic races than in America.² Nor should the remark of Professor Agassiz be overlooked, "that, in accordance with the zoological character of the

¹ *Natural History of the Varieties of Man*, p. 453.

² *Arch. des Sciences Naturelles*, Genève, 1860.

whole realm, this race is divided into an infinite number of small tribes presenting more or less difference one from another."

It is indeed necessary to determine what must be regarded as the essential requisites of Dr. Morton's American typical cranium ; for neither he nor his successors overlooked the fact of deviations from this supposed normal type, not only occurring occasionally, but existing as permanent characteristics of certain tribes. All, however, concurred in regarding them as mere variations ; and showed the value they attached to them in terms akin to those with which Dr. Nott thus concludes his reference to certain heads of more elongated form :—" My birth and long residence in the Southern States have permitted the study of many of these living tribes, and they exhibit this conformation almost without exception. I have also scrutinised many Mexicans, besides Catawbas of South Carolina, and tribes on the Canada Lakes, and can bear witness that the living tribes everywhere confirm Morton's type."¹

The ethnical classification of the ancient Mound-Builders is still an unsettled question. Yet it was one of their skulls which Dr. Morton selected as "the perfect type of Indian conformation ;" and Mr. Francis Pulszky, following up the suggestion in his *Iconographic Researches*, deduces from an engraving of one of the portrait pipe-sculptures of the mounds these comprehensive conclusions :—that the Mound-Builders were American Indians in type, and were probably acquainted with no other men but themselves ; to which he adds, "in every way confirming the views of the author of *Crania Americana*." Reference has been made in a previous chapter to the discovery of the "Scioto Mound Skull," embedded in a compact mass of carbonaceous matter, intermingled with a few detached bones of the skeleton and some fresh-water shells. This is the skull described in the "Catalogue of Human Crania in the Collection of the

¹ *Types of Mankind*, p. 441.

Academy of Natural Sciences of Philadelphia," edited by Dr. Meigs, as, "perhaps, the most admirably-formed head of the American race hitherto discovered. It possesses the national characteristics in perfection, as seen in the elevated vertex, flattened occiput, great interparietal diameter, ponderous bony structure, salient nose, large jaws and broad face. It is the perfect type of Indian conformation, to which the skulls of all the tribes from Cape Horn to Canada more or less approximate."

Of this skull the measurements which involve the most essential typical elements, and so furnish precise materials for comparison, are :—

Longitudinal diameter,	. . . . .	6.5 inches.
Parietal "	. . . . .	6.0 "
Vertical "	. . . . .	6.2 "
Inter-mastoid arch,	. . . . .	16.0 "
Horizontal circumference,	. . . . .	19.8 "

So that, in fact, the length, breadth, and height, very closely correspond. Still further, on examining the skull, the singular longitudinal abbreviation is seen to affect the posterior, much more than the anterior development, though a careful examination of the original has satisfied me that this is considerably exaggerated in the full-sized profile given in the *Ancient Monuments of the Mississippi Valley*, plate xlvii.

The accompanying woodcuts represent more correctly its facial and cranial aspects. One of its most characteristic features is the elevation and breadth of the frontal bone, in which it strongly contrasts with the Red Indian type of head. The occiput has been subjected to considerable compression, whether designedly or not, with the result of a much greater flattening than is shown in the engravings furnished by Dr. Davis; but it is unaccompanied by the depression of the frontal bone, which inevitably results from the processes adopted by the ancient Peruvians, and the modern Flathead Indians. Markedly defined, therefore, as is the amount of parieto-occipital flattening in this remarkable

skull, it is probably due to undesigned pressure of the cradle-board acting on a head naturally of a markedly brachycephalic type, with great posterior breadth. This is



FIG. 111.—Sejotic Mound Skull.

seen in the vertical view, Fig. 112, in which the truncated form is well shown, passing abruptly from the broad flattened occiput to the extreme parietal breadth; and then

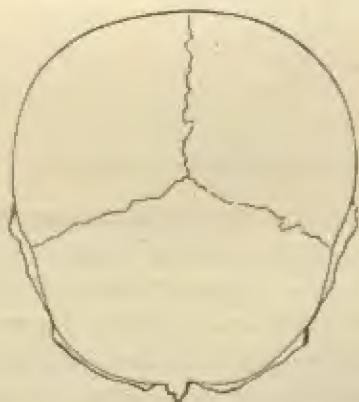


FIG. 112.—Sejotic Mound Skull, Vertical View.

tapering with slight lateral swell, until it reaches its least breadth immediately behind the external angular processes of the frontal bone. A skull in the collection of the Cana-

dian Institute, found in a Huron ossuary at Barrie, in Western Canada, most nearly approximates to it; yet not without differing in some essential points, in all which it corresponds to the modern Indian type. The forehead of the latter, though of fair development for an Indian head, is narrow and depressed in comparison with the mound skull; and while in profile, as shown in Fig. 125, the flattened character of the parieto-occipital region is very marked; the vertical view (Fig. 113) shows the more abrupt widening of the mound skull (Fig. 112) at the occiput, as compared with this. The formulæ deduced from the study



FIG. 115.—Barrie Skull: Vertical View.

of the most prevalent type of American cranium may be thus defined: A small receding forehead, somewhat broad at the base, but with a greatly depressed frontal bone;¹ a flattened or nearly vertical occiput; viewed from behind, an occipital outline which curves moderately outwards, wide at the occipital protuberances, and full from these points to the opening of the ear; from the parietal protuberances a slightly curved slope to the vertex, producing

¹ "There is no race on the globe in which the frontal bone is so much pressed backwards, and in which the forehead is so small."—*Humboldt*. "All possess alike the low receding forehead."—*Morton*.

a wedge-shaped outline; considerable vertical diameter; and the relative excess of interparietal diameter of the brachycephalic cranium. If to those are added large quadrangular orbits, cheek-bones high and massive, the maxillary region salient and ponderous, and the nose prominent: we have, nearly in Dr. Morton's own words, the most characteristic features of the form of head prevalent among ancient and modern American tribes of the brachycephalic type, and which was assumed by him as universal.

In proceeding to apply the test of physical conformation as a means of comparison between ancient and modern races of the New World, a revision alike of the evidence and the deductions therefrom becomes indispensable. Tried by Dr. Morton's own definitions and illustrations, the Scioto Mound skull differs from the typical cranium in some of its most characteristic features. Instead of the low, receding, unarched forehead, it has a finely arched frontal bone, with corresponding breadth of forehead. The wedge-shaped vertex is replaced by a well-rounded arch, curving equally throughout; and with the exception of the flattened occiput, due to artificial, though probably undesigned compression in infancy, the cranium is a uniformly proportioned example of an extreme brachycephalic skull. It is selected, in the *Types of Mankind*,¹ for the purpose of instituting a comparison with the well-developed head of a Cherokee chief, who died, while a prisoner at Mobile, in 1837, and the two crania are there engraved side by side, with other examples: "to show through faithful copies, that the type attributed to the American races is found among tribes the most scattered; among the semi-civilised and the barbarous; among living as well as among extinct races; and that no foreign race has intruded itself into their midst, even in the smallest appreciable degree." But, judging even by the drawings, without reference to measurements, the points of agreement are very partial. The vertical

¹ *Types of Mankind*, p. 442.

occiput of the ancient skull rounds somewhat abruptly into a slightly arched horizontal vertex, and with the well-developed forehead, and short longitudinal diameter, gives a peculiarly square form to it, in profile. In the modern skull, on the contrary, the occipital flattening is not so much that of the occiput proper, as of the posterior part of the parietal, together with the upper angle of the occipital bone: thereby uniting with the receding forehead to produce a conoid outline, in striking contrast to the square form of the other. But a comparison of the measurements of the two skulls, serves no less effectually to refute the supposed correspondence, adduced in proof of a typical unity traceable throughout tribes and nations of the Western Hemisphere widely separated alike by time and space.

	Ancient.	Modern.
Longitudinal diameter,	6.5	6.9
Parietal "	6.0	5.7
Vertical "	6.2	5.4
Frontal "	4.5	4.6
Inter-mastoid arch,	16.0	15.5
Inter-mastoid line,	4.5	4.75
Occipito-frontal arch,	13.8	14.4
Horizontal circumference,	19.8	20.4

It is not to be supposed that any single skull can be selected as the embodiment of all the essential typical characteristics either of the ancient or the modern cranial conformation; nor can we deduce general conclusions as to the physical characteristics of the ancient Mound-Builders from the special example referred to. We lack, indeed, sufficient data as yet for any absolute determination of the cranial type of the mounds; but the Scioto Mound skull cannot with propriety be designated as "the only skull incontestably belonging to an individual of that race."

In 1870 Mr. J. W. Foster read before the Chicago Academy of Sciences a paper on the Mound-Builders' Skulls, which in a more extended form, he subsequently embodied in his *Prehistoric Races of the United States of America*.

The circumstances attendant on the recovery of several of the examples referred to undoubtedly suggest considerable antiquity; but the evidence is far from conclusive as to their relation to the true Mound-Builders. The majority of them, including the most perfect skull, were derived from sites far apart from any of their remarkable earth-works; and the accompanying implements, pottery, and other relics, rather indicate the sepulture of later Indian tribes. But Mr. Foster is guided in his reasoning by evidence which, if rightly interpreted, would render the Mound-Builders not only prehistoric, but possibly pleistocene. He tests them by the Neanderthal skull to which he conceives them to approximate; and arrives at the conclusion that "The Mound-Builders' crania were characterised by a general conformation of parts which clearly separated them from the existing races of man, and particularly from the Indians of North America;"¹ and, after discussing the characteristics of the best preserved example, derived from an Illinois mound, he arrives at the conclusion that many of them "indicate an approach towards the lower animals of the Anthropoid type." The inferences thus deduced do not appear to be borne out by the evidence; and if they did, would in no way accord with previous observations.

The Scioto Mound Skull undoubtedly contrasts in some respects with the Red Indian type of head; but so far from approaching to any lower anthropoid type, its cerebral capacity is above the average; and one of the most characteristic features in which it differs from the ordinary Indian head is the elevation and breadth of the frontal bone, indications of a cerebral development more in accordance with the character of that singular people who, without architecture or the matured arts of the metallurgist, have perpetuated in mere structures of earth, the evidences of geometrical skill, a definite means of determining angles, a fixed standard of measurement, and the capacity, as well as

¹ *Prehistoric Races*, p. 275.

the practice of repeating geometrically constructed works of large and uniform dimensions. Nor is this skull the solitary example of such characteristics. Another, from Grave Creek Mound, which Dr. Morton has figured, belongs no less indisputably to the same race, and presents in its arched forehead, prominent superciliary ridges, and compact, uniformly rounded profile, a general correspondence to the previous example.¹ In 1853, Dr. J. C. Warren exhibited to the Boston Natural History Society the cast of a second and more perfect skull from the same mound,² which I have since examined and measured in the collection of Dr. J. Mason Warren. It is also worthy of note that several inferior maxillary bones of the mound skeletons have been recovered nearly entire. They are remarkable for their massiveness, and are stated to be less projecting than those pertaining to the skeletons of a later date.³ Another skull described by Dr. Morton was obtained from a mound on the Upper Mississippi, on an elevated site bearing considerable resemblance to that where the Scioto Valley cranium was found; but the evidence is insufficient to remove the doubts which its proportions suggest, that in this, as in so many other cases, we have only one of those later interments habitually made by modern Indians in the superficial soil of the mounds.

Mr. Charles C. Jones, in his *Antiquities of the Southern Indians*, describes and figures an ancient skull found at the base of a large truncated mound on the Ocmulgee River, in Georgia. It is a brachycephalic skull which has been subjected to such great compression that the frontal bone is flattened, and the vertex, as seen in profile, is elevated into a cone. Above this skeleton were interments of more recent character, with skulls of a different type. At Newark I examined the imperfect remains of three ancient skulls

¹ *Crania Americana*, pl. liii. p. 223.

² *Proceedings of Boston Nat. Hist. Soc.*, vol. iv. p. 331.

³ *Ancient Monuments of the Mississippi Valley*, p. 290.

recovered from mounds in the vicinity. A fourth, which is in good preservation, lay at a depth of seven feet from the top in Veach Mound. But it is undoubtedly that of a female of the modern Indian race. The others were found on opening Tippet's Mound, distant about six miles from Newark, in the centre of the mound, fully twenty-one feet from the top. They are all in a state of extreme decay; but so far as can be judged, they correspond in general breadth of forehead, very slight development of the superciliary ridges, and great breadth at the root of the nose, with a flattening of the nasal bones at the junction with the frontal bone. In one of them the glabella is prominent; and even protrudes abruptly on the right side. But all are fragmentary. In the Evans Mound in the same district, so rich in remains of the Mound-Builders, at the opening of which I was present, three skeletons were exposed, but in such a state of decay, that in spite of every effort to detach the most perfect skull with a mass of the surrounding clay, and so to expose it to the sun, it crumbled to fragments.

In 1866 a skull of unusual character was found at Rock Bluff, on the Illinois River, at a depth of three feet in seemingly undisturbed drift, in a narrow fissure of the rock. It is now in the Smithsonian collection; and is characterised by its great length, to which an extreme parieto-occipital prolongation gives additional prominence. The length is to the breadth as 41 to 27; but Dr. Meigs, to whom this skull has been submitted, ascribes its strongly pronounced dolichocephalism to the premature ossification of the sagittal suture. Nevertheless, he recognises in it a resemblance in some important points to certain mound skulls, including two procured by Mr. Squier from one of the ancient mounds of Chillicothe, Ohio.¹ The characteristics of these skulls essentially differ from those of the supposed typical skull of the Scioto Mound; and if true Mound-

¹ *Smithsonian Report*, 1867, p. 412.

Builders' skulls, and not subsequent interments, they put an end to any apparent prospect of agreement on this undetermined point.

But it rather accords with the singular characteristics of the Mound-Builders' works, in which unmistakable traces of intellectual progress, surpassing the highest attainments of any known Indian race, are the accompaniments of a general condition of very partially developed arts: to anticipate the traces of two essentially diverse races in their common sepulchres. Such a condition of things seems to be most readily accounted for on the assumption of a theocratic or patrician order, like the Brahmins of India, or the Incas of Peru, under whom an inferior race executed the geometrical earthworks of Ohio with such mathematical accuracy. The careful investigations of the late Dr. Thurnam disclosed remarkable proofs of the contemporaneous presence in Britain, in some remote prehistoric age, of the dolichocephalic builders of the chambered long barrows along with a subject brachycephalic race, whose cleft skulls lie in the same megalithic sepulchral vaults, alongside of their uninjured long skulls, suggesting the idea of slaves immolated at the obsequies of their chiefs.¹ Thus far, however, the best established examples of mound crania accord with the brachycephalic type which the Scioto Mound skull illustrates; and with those also, another ancient class of skulls derived from the cave sepulchres of Ohio and Kentucky, agree so far as to admit of their being fitly classed together in any attempt at determining the predominant characteristics of the elder race. The following table, accordingly, includes a series of measurements of mound and ancient cave crania, mostly taken by myself from the originals in the Academy of Natural Sciences at Philadelphia, the collection of Dr. Warren of Boston, and elsewhere:—

¹ *Vide Crania Britannica*. Accounts of Roilmorton, Kennet, West Kennet, Uley, and Littleton Drew long barrows.

TABLE I.—MOUND AND CAVE CRANIA.

	LOCALITY.		L. B.	P. B.	F. B.	V. B.	L. A.	L. L.	O. F. A.	H. C.
1.	Scioto Mound,	M.	6.5	6.0	4.5	6.2	16.0	4.5	13.8	19.8
2.	Grave Creek Mound,	M.	6.6?	6.0	...	5.0	...	...	14.2?	...
3.	" "	M.	6.6	6.0	4.0	5.4	15.6	4.3	...	20.2
4.	Tennessee, "	M.	6.6	5.6	4.1	5.6	15.2	4.4	14.0	19.5
5.	Huron River, Ohio,	M.	6.7	5.7	4.0	...	14.8	4.4	14.1	19.8
6.	" "	F.	6.7	5.4	4.0	5.4	14.0	4.2	13.7	19.9
7.	Ohio Mound, "	F.	6.4	5.3	4.0	5.0	14.2?	4.2	...	19.0
8.	Alabama Mound, "	M.	6.2	5.4	4.3	4.9	14.6	3.8	13.3	18.5
9.	Golconda Cave, "	M.	6.7	5.4	4.3	5.5	14.5	4.1	14.0	19.3
10.	Stenbenville Cave, "	M.	7.0	6.1	4.6	5.6	15.5	4.3	14.0	20.5
11.	" "	M.	6.8	5.9	4.4	5.7	15.5	4.5	14.4	20.5
12.	" "	M.	6.3	5.9	4.9	5.7	15.8	5.0	14.1	20.0
13.	" "	M.	6.6	6.0	4.6	5.1	14.6	4.2	13.3	20.0
14.	" "	F.	6.6	5.4	4.3	5.1	14.1	4.3	13.9	19.0
15.	" "	M.	7.0	5.8	4.5	5.5	14.9	4.5	14.4	20.3
16.	" "	M.	6.7	6.0	4.5	5.7	15.4	4.7	14.1	20.3
17.	" "	F.	6.2	6.1	4.5	4.9	15.1	4.7	13.3	19.4
18.	" "	M.	7.1	5.7	4.6	5.0	15.0	4.4	14.2	20.2
19.	" "	M.	6.2	6.0	4.5	5.5	14.8	4.0	13.2	19.4
20.	Kentucky Cave, "	M.	6.1	5.4	4.4	5.6	14.5	4.4	13.6	18.4
21.	" "	M.	6.7	5.5	4.5	6.2	13.5	5.0	...	19.7
Mound Crania Mean,			6.54	5.67	4.13	5.36	14.91	4.23	13.83	19.53
Cave Crania Mean, "			6.62	5.78	4.51	5.47	14.85	4.42	13.87	19.77
Total Mean, " "			6.58	5.74	4.37	5.43	14.87	4.35	13.86	19.68

Of the series embraced in this table, though all are ancient, only the first four can be relied upon as undoubted examples of the crania of the Mounds. In comparing them with others, there are indications of a peculiar cranial type partially approximating to the brachycephalic Peruvian cranium; but this assumed correspondence has been exaggerated, and some important differences have been slighted or ignored, in the zeal to establish the affinities which such an agreement would seem to imply. In vertical elevation the Peruvian cranium is decidedly inferior; but the most distinctive feature thus far indicated by the few well-authenticated Mound crania, is the well-formed and arched frontal bone, unaffected by the pressure to which the vertical occiput must be ascribed. Dr. J. C. Warren pro-

nounced the Mound and Peruvian crania to be identical. A greater correspondence seems to be traceable between the most ancient crania of the Mexican Valley and those of the Mounds. But, tempting as are the conclusions which such analogies suggest, any final decision on the ethnical significance of such skull-forms must be reserved until further discoveries place within our reach a sufficient number of skulls as well authenticated as those of the Scioto Valley and Grave Creek Mounds. This, there is little hope of achieving, until systematic explorations are instituted under the direction of a scientific Commission, the organisation of which would reflect credit on the Government of the United States. The Cave crania, Nos. 9-21, are a remarkable series of undoubted antiquity, and present a nearer approximation to the Mound type than any other class. Their most notable divergence, in the parietal diameter, disappears if the doubtful examples of the latter, Nos. 5-8, are excluded, as in Table xv.

Turning from this review of the meagre data thus far recovered from the ancient sepulchral mounds, let us next consider the two great civilised nations of the New World, the Peruvians and Mexicans. Their civilisation had an independent origin and growth. The scenes of its development were distinct; and each exhibited special characteristics of intellectual progress. Nevertheless, they had so much in common, that the determination of the physical type peculiar to each will be best secured by ascertaining what is common to both.

When Dr. Morton first undertook the investigation of the cranial characteristics of the American races, he admitted the force of the evidence presented to him in the examination of a number of ancient Peruvian skulls; and has recorded his recognition of the traces of well-defined brachycephalic and dolichocephalic races among the ancient Peruvians.¹ But the seductive charms of his comprehensive theory of

¹ *Crania Americana*, p. 98.

an American ethnic unity ultimately prevailed over the earlier opinion: which, even in the *Crania Americana*, was stated as a legitimate deduction from the evidence in question, without being incorporated into the author's concluding propositions; and he accordingly records his final conviction that all the extremest varieties of the Peruvian head were naturally "of the same rounded shape, which is characteristic of the aboriginal race, from Cape Horn to Canada,"¹ and owe their diversities of form solely to artificial deformation.

In the investigations into the arts, the modes of sepulture, and the peculiar cranial characteristics of the ancient Peruvians, the results of which are embodied here, various collections of Boston, New York, Philadelphia, Washington, and Edinburgh, have been turned to account; in addition to which I have enjoyed special facilities for minutely studying an interesting collection of antiquities, crania, and mummied bodies, procured by Mr. Blake from ancient Peruvian cemeteries, on the shore of the Bay of Chacota, near Arica, in latitude $18^{\circ} 30'$ s.; and have also been favoured with his carefully elaborated notes on the subject. The desert of Atacama, between the eighteenth and twenty-fifth degrees of south latitude, has been the site of sepulture for ancient Peruvian races through a period of unknown duration, and numerous cemeteries have been opened and despoiled. The mode of sepulture, and the articles deposited with the dead, present so uniform a resemblance, that, excepting in one point, Mr. Blake observes, a description of one may suffice for the whole. The difference noted arises from the varying soil. The greater number are interred in the dry sand, which generally covers the surface to a sufficient depth; but in some instances the excavations have been made in a soft rock (gypsum) which here and there approaches the surface. In this arid district, such is the nature of the soil and climate that articles which speedily

¹ *Physical Type of the American Indians*, p. 326.

perish in a damp soil and a humid atmosphere, are found in perfect preservation after the lapse of centuries. Added to the facilities which nature has thus provided for perpetuating the buried traces of the ancient Peruvians, they practised the art of embalming their dead. One of the largest cemeteries referred to is situated on a plain at the base of a range of low hills on the shore of the Bay of Chacota, a little southward of Arica, and about 185 leagues south-east of Lima. This plain is formed of silicious sand and marl, slightly impregnated with common salt, and nitrate and sulphate of soda. It is exceedingly light, fine, and dry; and such is its preservative nature, that even bodies interred in it without any previous preparation have not entirely lost the fleshy covering from their remains. In the cemeteries of this vast arid plain, the objects which, in all probability, were most highly prized by their owners were laid beside them, along with every article required in preparing the body for interment. Thus the needles used for sewing the garments and wrappings of the dead, the comb employed in dressing the hair, and even the loose hairs removed in this last process of the toilet, are all found deposited in the grave.

The collection of Peruvian antiquities formed by Mr. Blake, includes curious specimens of native pottery, implements wrought in stone, bronze, and wood, and numerous interesting sepulchral relics illustrative of native arts and customs. But the most valuable department embraces the entire contents of a Peruvian tomb, including the mummies of a man and woman, and the partially desiccated remains of a child. Some of the contents of this grave have already been referred to in illustration of Peruvian civilisation in a previous chapter; but a minute notice of its human remains, with the special accompaniments of their interment, will furnish information on various obscure points in the social history of this remarkable people. It was obviously a family tomb. The male mummy is that of a man in the

maturity of life, in the usual sitting position with the knees drawn up to the chin. With the exception of a part of the integuments of the lower jaw, the body is in a good state of preservation. On its transference to the humid atmosphere of New England, the flesh became somewhat softened, but it exhibits no symptoms of decay. It is dark brown, and possesses a peculiar penetrating odour, somewhat similar to that of an Egyptian mummy. The head is of the common rounded Peruvian form, with retreating forehead, high cheek bones, and prominent nose. The breadth of hand, as measured across the extremity of the metacarpal bones, with every allowance for the contraction produced in mummification, is remarkably small. The hair has undergone little or no change, and differs essentially from that most characteristic feature of the Indian of the northern continent. It is brown in colour, and as fine in texture as the most delicate Anglo-Saxon hair. It is neatly braided and arranged, the front locks being formed each into a roll on the side of the head, while the hair behind is plaited into a triangular knot of six braids. The parti-coloured woollen garments and wrappings of this mummy are of fine texture. The head-dress was an oblong striped hood; over which was a cap formed of woollen threads of various colours, ingeniously woven and surmounted by feathers and an ornament formed of the quills of the condor. A quiver made of the skin of a fox contained five arrows, the shaft of each consisting of two pieces of reed, tipped with sharp-pointed and barbed flint-heads, regularly formed, and attached by a tough green cement. Also suspended to one side, by a hair cord passing over the shoulder, was a woollen bag, finely woven in stripes of black, white, and brown, and curiously sewed at the sides with threads of various colours. This contained leaves of the coca, and a thin silver disk or medal, surrounded by a series of one hundred small indentations near the edge, and in the centre a space of three-fourths of an inch countersunk and per-

forated with a small round hole. To this a hair cord of about two feet in length is secured, probably to suspend it round the neck. When the hood was removed from the head a small earthen vessel, with rounded base, measuring about two inches in greatest diameter, and with the top covered by a membrane, was found secured under the chin.

The body of the female from the same tomb presents nearly similar characteristics. The hair is shorter, and somewhat coarser, but fine when compared with that of the northern Indians. It is of a light brown colour, smooth, and neatly braided across the upper part of the forehead, then carried backward and secured on each side of the head. The flesh of the legs, from the ankles to the knees, is covered with red paint; and marks of the same pigment are also traceable on the hair and on the outer woollen wrappings, presenting the impress of a hand. Such marks are common on Peruvian mummies; and, taken into consideration along with the small size of the hand, already noticed, they forcibly recall the *mano colorado* observed by Stephens amid the ruins of Uxmal: the impress of a living hand, but so small that it was completely hid under that of the traveller or his companion. It afterwards stared them in the face, as he says, on all the ruined buildings of the country; and on visiting a nameless ruin, beyond Sabachtsché, in Yucatan, Mr. Stephens remarks: "On the walls of the desolate edifice were prints of the *mano colorado*, or red hand. Often as I saw this print, it never failed to interest me. It was the stamp of the living hand. It always brought me nearer to the builders of these cities; and at times, amid stillness, desolation, and ruin, it seemed as if from behind the curtain that concealed them from view was extended the hand of greeting. The Indians said it was the hand of the master of the building." Indications of community of customs or usage between the Peruvians and the ancient builders of Yucatan or Central America are full of interest, however slight; nor does it detract from their value when,

as in this case, the same practice pertains to the northern tribes, and is interwoven with their symbolic decorations.

The symbol of the expanded hand appears among the devices on the Engraved Aztec Hatchet, Fig. 109 ; and constantly recurs in painted or graven ideography. An illustration figured here, copied by Lieut. J. H. Simpson, U.S.A., from the Moro Rock, in the valley of the Rio de Zuñi, exhibits the open hand in a group of Indian characters, or devices, alongside of which is a Spanish inscription



FIG. 114.—Moro Rock Inscription.

of the seventeenth century. Another example, apparently of early Spanish origin, on the same Moro Rock, shows the open hand, with the singular addition of a double thumb, enclosed in one cartouche alongside of the sacred monogram I.H.S., as though it were the recognised native counterpart of the Christian symbol. According to Mr. Schoolcraft: "The figure of the human hand is used by the North American Indians to denote supplication to the Deity or Great Spirit ; and it stands in the system of picture-writing as the symbol for strength, power, or mastery thus derived." It admits, however, of comprehensive application, with varying significance. Irving remarks in his

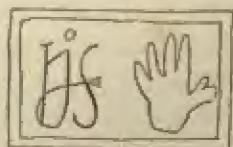


FIG. 115.—Moro Monogram.

Astoria: "The Arickaree warriors were painted in the most savage style. Some had the stamp of a red hand across their mouths, a sign that they had drunk the life-blood of a foe." Catlin found the same symbol in use for decoration, and as the actual sign-manual among the Omahaws and the Mandans; and I have repeatedly observed the red hand impressed in a similar manner both on the buffalo robe and on the naked breast of the Chippewas of Lake Superior.

Upon removing the outer wrapper of the female Peruvian mummy, a wooden comb, a pair of painted sandals of undressed skin, and a package of rutile, or oxide of titanium, were found beneath. In addition to those, the tomb contained many other objects, such as ears of maize, leaves of coca, a roll of cotton cord, etc., enclosed in bags of fine texture, ingeniously woven of woollen threads, in patterns and devices of various colours, and evidently such as had been in use by their owner. The contents of one of these have a double significance for us. Woven of a peculiar pattern different from all the others, and of an unusually fine texture: it was found, on being opened, to contain a small bead of malachite, the only one discovered in the tomb, and locks of human hair, each secured by a string tied with a peculiar knot. All the hair is of fine texture, of various shades, from fine light brown to black, and to all appearance has undergone no change.

The colour and texture of the hair are facts of great importance to the ethnologist, as indicating essential difference from the modern Indians in one respect; and therefore confirming the probability of equally important ethnic differences, suggested by other evidence. But the discovery has also another aspect of interest. In this family tomb, in which lay the parents with their infant child, we may assume with little hesitation that we have the locks of hair of the surviving relatives: in all probability of elder members of the same family as the infant interred here in its

mother's grave. It is a touch of genuine human tenderness such as "makes the whole world kin," and animates anew that long-forgotten past with feelings to which the kindest sympathies of our common nature respond. Alongside of the female there also lay an unfinished piece of weaving stretched upon its frame, and with its yarn of various colours still bright: the work of the deceased, doubtless, and probably the last labour that had engaged her hands. The needle of thorn was in it, and beside it several balls of yarn. We need not necessarily assume that it was laid beside her under the belief that she would resume her task in a future life. It appears rather another of those gentle traits which derive further illustration from other contents of the Atacama cemeteries.

In the same grave lay the remains of the young infant, carefully wrapt in a soft black woollen cloth, and then enclosed in the skin of a penguin with the feathered side inward. Fastened to the woollen wrapper was a pair of little sandals, two and a half inches long. The head was partially covered with a loose cap lined with a wadding of human hair, and cotton stained with red pigment. Within the cap was a large lock of hair resembling that of the female, which, as already described, had been cut short, probably as a sign of mourning, as is still practised by the women of many Indian tribes. Beside it there also lay, in a cloth envelope, secured with elaborate care, a brown cord with seven knots, and at the end what is believed to be the umbilicus. This was, no doubt, the quipu, or sepulchral record, which to the eye of the bereaved mother recalled every cherished incident in her child's brief career. Around its neck was a green cord to which a small shell was attached; and within the wrappings were several *Littora Peruviana*, and also small rolls of cotton, and of hair of the vicuna, enclosing leaves of coca. In another cemetery, several hundred miles to the south of the Bay of Chacota, Mr. Blake found many bodies of infants, each enclosed in an oval sarcophagus cut out of a single block of wood; and

he also notes the more singular discovery, frequent in Peruvian cemeteries, of the fœtus in all stages of development, and deposited in the grave with the same elaborate evidences of care as was expended on the deceased infant. The practice is remarkable, if not indeed unique.

Professor Busk, in commenting on a collection of Peruvian skulls recently acquired by the London Anthropological Institute, draws attention to the fact that on many of them the hair is still abundant, and points out its prevailing characteristics. It is "by no means coarse, but rather fine and silky; nor is it truly black, but rather of an auburn tint; whilst on one the hue is reduced to a dirty stone colour."¹ That it may have undergone a change of colour under all the influences to which it has been subjected is far from improbable; but neither time, nor exposure in a hot soil, would seem capable of transforming the coarse hair of the modern Indian to a fine silky texture.

Such are some illustrations of ancient Peruvian customs and sepulchral rites, along with evidence of characteristics which go far to disprove the assumed unity of physical type throughout the Western Hemisphere. No feature of the modern Indian is more universal, or yields more slowly even to the effacing influences of hybridity, than the long, coarse black hair which so strikingly contrasts with the short woolly covering of the Negro's head. I have repeatedly obtained specimens from Indian graves, as from the Huron graves near Lake Simcoe, the most modern of which cannot be later than the middle of the seventeenth century. In all those the hair retains its black colour and coarse texture, unchanged alike by time and inhumation; and in this respect corresponds with that of the modern Indians of South America, and also of the Chinese and other true Mongols of Asia. The Peruvians, Dr. Morton observes, "differ little in person from the Indians around them, being of the middle stature, well limbed, and with small feet and hands. Their faces are round, their eyes small, black, and

¹ *Journal of Anthropol. Inst. of Gr. Britain*, vol. iii. p. 90.

rather distant from each other; their noses are small, the mouth somewhat large, and the teeth remarkably fine. Their complexion is a dark brown, and their hair long, black, and rather coarse." In this respect, therefore, the disclosures of the Peruvian cemeteries of Atacama reveal important variations from one of the most persistent and universal characteristics of the modern American races; nor is their evidence less conclusive as to the essential diversity in cranial conformation. On this latter point the collections of Mr. Blake throw great light; and the conclusions forced on him by much more extended observations carried on during his residence in Peru led to the conviction that two distinct forms of skull are found in the ancient cemeteries of that country, "the one rounded or globular, the other elongated." Those of the bodies found in the tomb described above are of the former, or brachycephalic type; but the collection of crania made by Mr. Blake was selected by him from a very large number, as fair average specimens of each of the two distinct types which presented themselves to his observation during his exploration of the ancient cemeteries of the desert of Atacama. Along with these, those described by Dr. Morton, and others which I have had opportunities of examining in various collections, furnish materials from whence the following conclusions are derived. The skulls are generally small: a characteristic in part, at least, ascribable to the average stature of the people, which Dr. Morton left out of consideration when estimating the comparative size of the brain of the "Toltecan" and "Barbarous" subdivisions of his "American Group." The relative development of the different branches separately noted by him was well calculated to suggest further inquiry; as they seemed to indicate that civilisation had progressed in an inverse ratio to the cerebral mass. The mean internal capacities of skulls of the American races are thus grouped in a table showing the size of the brain in cubic inches: Peruvians 75·3, Mexicans 81·7, Barbarous tribes 84·0. The practice of

compressing the head was so generally in use among the Peruvians that it is rare to find a skull unaffected by such transformation. But the results of a study of numerous examples are thus noted for me by Mr. Blake, in reference to the brachycephalic Peruvian skull :—"The occipital bone is flat, and the forehead retreating, but elevated and broad when compared with the elongated skull. The temporal fossa is not remarkably large. When the eye is directed downward upon these skulls, the occiput being towards the observer, the zygomatic arch is nearly in most, and entirely in some of them hidden from the sight. Viewed in the



FIG. 116.—Peruvian Brachycephalic Skull.

same position, the face is completely hidden by the upper and front part of the cranium. The orbits are deep, and their margins quadrangular. The bones of the nose are prominent, and the orifices large. The cheek-bones are high. The alveolar edges of the jaws are obtusely arched in front, and the chin projects on a line with the teeth. Compared with the elongated skulls, the face is small, and its outlines more rounded. The cheek-bones descend in nearly a straight line from the external angular process of the frontal bone." Figure 116 illustrates the characteristics of this type of ancient Peruvian head, as seen in one brought from the cemeteries of Atacama ; though, in this example, the frontal

bone is unusually high and well-arched. The occiput is also smoothly rounded, and the skull symmetrical throughout. Fig. 117 shows the brachycephalic skull depressed and thrown backward, and illustrates one of the commonest Peruvian forms resulting from artificial compression in infancy. The following table consists chiefly of measurements of crania in the Boston and Philadelphia collections. It also includes those of four (Nos. 1-4) selected by Mr. Blake, from a large number, as fair average specimens of the prevailing type; and to those I have added three, believed to be female, from Professor Busk's measurements, in order to secure some nearer approximation to an average result of the two sexes.

TABLE II.—PERUVIAN BRACHYCEPHALIC CRANIA.

	LOCALITY.	L. D.	P. D.	P. D.	V. S.	L. A.	L. F.	G. P. A.	H. C.
1.	Atacama, M.	6.0	5.2	3.5	5.2	...	...	...	...
2.	" M.	6.3	5.0	3.5	5.3	...	...	...	...
3.	" M.	6.6	5.3	3.4	5.3	...	...	...	...
4.	" M.	6.7	5.6	3.6	5.4	...	...	...	...
5.	S. of Arica, . . . M.	6.1	5.6	3.4	5.1	14.6	4.1	...	18.4
6.	" M.	6.4	5.1	3.2	5.1	14.5	4.1	...	19.0
7.	Peru, M.	6.2	5.8	3.7	5.6	15.1	4.2	...	19.1
8.	Lima, M.	6.3	5.8	3.6	5.4	15.8	4.2	...	19.7
9.	Titicaca, M.	6.3	5.9	4.0	5.3	16.0	4.1	...	19.2
10.	" (145) M.	6.2	5.9	3.4	5.0	14.7	4.3	...	20.1
11.	" (146) M.	6.5	5.9	4.0	5.3	15.5	4.9	...	19.5
12.	Arica, M.	6.5	5.2	4.3	5.1	14.5	4.0	13.8	18.5
13.	Temple of Sun, . . F.	5.8	5.7	4.4	5.1	14.5	4.1	12.7	18.4
14.	" M.	6.1	6.0	4.7	5.5	16.0	4.5	14.1	19.5
15.	Pachacamac, . . . M.	6.7	6.0	4.5	5.6	16.2	4.5	14.5	20.2
16.	" M.	6.3	5.8	4.5	5.3	15.0	4.6	13.2	19.6
17.	Santa, M.	6.2	5.4	4.3	4.9	14.6	3.8	13.3	18.5
18.	Kinac, M.	6.5	5.6	4.5	5.0	14.7	3.8	13.2	19.2
19.	Pachacamac, . . . F.	6.6	6.0	4.6	5.1	15.5	4.1	13.5	19.8
20.	" M.	6.6	5.7	4.2	5.2	15.5	4.4	13.0	19.4
21.	" F.	6.3	5.5	4.2	5.0	14.5	3.7	13.2	18.5
22.	" M.	6.3	5.3	4.4	4.6	14.0	3.9	13.0	18.7
23.	" M.	6.4	5.5	4.3	5.2	14.8	4.0	13.2	19.0
24.	" F.	6.2	5.5	4.4	5.0	13.6	3.8	12.6	18.7
25.	" F.	6.1	5.9	4.6	5.2	15.2	4.1	13.2	19.2
26.	" M.	6.2	5.8	4.3	4.9	14.5	4.1	12.6	18.7
27.	Pasamayo, F.	6.2	4.7	4.0	5.0	12.3	...	12.9	18.0
28.	" F.	5.8	5.9	4.8	5.0	14.1	...	13.4	19.4
29.	" F.	6.2	5.8	4.7	5.7	13.6	...	13.8	19.3
	Mean,	5.97	5.12	3.73	4.93	14.76	4.12	12.92	18.76

In reviewing some of the questions which the laborious zeal of Dr. Morton for the first time furnished any adequate means for answering, there are certain elements affecting the results which have not been taken into due account. It chances that extensive Peruvian cemeteries lie near the coast, and within easy access, so that hundreds of skulls, and even the complete contents of graves, have been repeatedly carried off for European and American collections; whereas specimens derived from important historical sites in the interior, such as Titicaca and Cuzco; like those from Mexico and Central America: are exceedingly rare. The Morton collection includes 221 Peruvian skulls, of which nearly the half are from a single locality, 62 from another, and 20 from a third; whereas of the whole barbarous tribes there are only 164 specimens, gathered singly, by many collectors, over the whole continent. It will inevitably happen that in selecting a skull from a tumulus or ossuary, the most remarkable for form or size will be chosen; and this process of natural selection in the latter class must affect the average results, as compared with Peruvian crania, of which Professor Agassiz received 368 specimens exhumed from a single locality. Here it is obvious that the number of examples of a common type may be very deceptive; and a second cargo of brachycephalic skulls from the same locality, however numerous, would add no confirmation to previous inductions, but rather tend to increase a false average. The process of natural selection referred to is worthy of consideration in estimating the evidence derived from any large collection of human skulls.

But the special question of Peruvian head-forms is cumbered with other confusing elements. In many examples of artificially deformed brachycephalic skulls the forehead is depressed with a corresponding affection of the occiput, as shown in Fig. 117. Here the actual longitudinal diameter is not greatly affected; but if the length be taken from the base of the frontal bone to the most distant pos-

terior projection, without reference to the displacement of the true points of measurement, a deceptive longitudinal diameter is the result. In his early observations Dr. Morton was led to the belief that certain Peruvian skulls were those of the ancient precursors of the Inca race. In this class, judging from examples in his collection, there is no doubt that he ranked indiscriminately all which yielded a great longitudinal measurement, however produced. The opinion thus arrived at clashed with the seductiveness of his theory of an otherwise uniform American cranial type. When therefore he recognised his error, he welcomed the discovery as removing the one flaw in his comprehensive



FIG. 117. — Peruvian Depressed Skull.

system ; and he thus records his final judgment :—" I at first found it difficult to conceive that the original rounded skull of the Indian could be changed into this fantastic form, and was led to suppose that the latter was an artificial elongation of a head remarkable for its length and narrowness. I even supposed that the long-headed Peruvians were a more ancient people than the Inca tribes, and distinguished from them by their cranial configuration. In this opinion I was mistaken. Abundant means of observation and comparison have since convinced me that all these variously-formed heads were originally of the same rounded shape."

But granting that Dr. Morton's earlier opinion was based on false premises, and that his final judgment was correct in reference to certain Peruvian skulls "changed into this fantastic form," it by no means follows that the existence of a genuine Peruvian, or Aymara dolichocephalic type is thereby disproved. As already suggested in the case of the Mound-Builders, as well as in that of the Peruvians, there are elements in the sacerdotal caste and the system of government of the latter well calculated to confirm the idea of a patrician race distinct from the great mass of the people, to which the national traditions lent countenance.

Reference has already been made to a collection of Peruvian skulls in the possession of the London Anthropological Institute; and to Professor Busk's reported results of a careful study of their characteristics. They include 150 specimens, obtained from ancient cemeteries by Mr. T. J. Hutchinson during his residence at Callao as British Consul. To the same gentleman Professor Agassiz was indebted for the more numerous collection noticed above. The skulls of both collections, taken as a whole, are markedly brachycephalic. But there are also examples of the rarer elongated form. I am indebted to the late Professor Jeffries Wyman, curator of the Peabody Museum, for the results of his study of the specimens acquired by Professor Agassiz, and placed under his care. Of the whole number of skulls only eleven show no signs of distortion or artificial pressure. The greater number are flattened from before backwards; and they are, with one exception, of the brachycephalic type. This great uniformity is, no doubt, in part due to their having been all procured from Ancon and its neighbourhood. The collection is indeed characterised in the report of the Peabody Museum for 1874 as "one of the largest which has been made from any single locality."

The London collection, though smaller in number, is more valuable, on account of its specimens having been obtained from localities wide apart, including Santos, Ica,

Ancon, Passamayo, thirty miles north of Callao, and Cerro del Oro, about a hundred miles south. In those also the brachycephalic type predominates; but they include a few long skulls; and Professor Busk states, after a careful study of the whole, that "the evidence of the existence of a dolichocephalic type afforded in the present collection is not very abundant, but is nevertheless decisive." He further adds that, looking to the probability that the practice of deformation originated in an effort to exaggerate the natural form, "we cannot fail to perceive in the elongated skulls from Titicaca, that that peculiar kind of deformation has arisen from a desire to add to the attractive features of the peculiarly elongated form of skull, of which several instances are presented in the collection."¹ The Peruvians perpetuated the tradition of a race which had preceded the Incas, to which they ascribed their oldest architectural remains at Lake Titicaca and elsewhere; it is therefore consistent with other evidence that we should find in those localities indications of a distinct ethnical type.

The results disclosed by a minute study of the two extensive collections of Peruvian skulls, due to the explorations of Mr. T. J. Hutchinson, confirm all former evidence as to the nearly universal practice of mechanical distortion; and at the same time sustain the opinion that compression in no degree diminishes the cranial capacity. So far indeed as the evidence of the Peabody collection goes, it would justify an opposite conclusion; unless, as is probable, the small skulls are female. Neither does artificial deformation necessarily efface the primary form of any strongly marked type of head, unless where it leads to premature ossification of the sutures. The relative proportions of the bones, and especially of the parietals, can still be discerned, though greatly altered in contour. Hence the same compression applied to a naturally brachycephalic skull, such as the strongly defined example of that of a child from Santa,

¹ *Journ. Anthropol. Inst.* vol. iii. p. 93.

reproduced in Fig. 118, from the *Crania Americana*; and an equally well defined dolichocephalic skull, like that of another child shown in Fig. 120, results in two differently modified forms, in which the primary type of each is a factor. Professor Tiedmann describes certain skulls brought from the borders of Lake Titicaca as remarkable for their unusual length, the longitudinal axis being much longer than he had observed in any other skulls. But the breadth was proportionately small, as if produced by lateral compression. These appear to correspond with other examples of the abnormal dolichocephalic Peruvian skull. Like all artificially modified crania, they are generally



FIG. 118. — Santa Child's Skull

unsymmetrical. Dr. Morton remarks of the Peruvian skulls examined by him : "These heads are remarkable not only for their smallness, but also for their irregularity, for, in the whole series in my possession, there is but one that can be called symmetrical ;"¹ and this, it must be remembered, applies equally to both types.

Keeping in view then the distinction between the depressed brachycephalic and the true dolichocephalic type, the latter class give no countenance to the theory that the long Peruvian skull is a mere result of artificial deformation ; while certain peculiarities in the facial proportion

¹ *Crania Americana*, p. 115.

confirm the idea of ethnical diversity. Throughout the numerous round barrows, and generally in the short cists of Great Britain, the prevalent type of skull is brachycephalic, with considerable uniformity of ethnical character. But reference has already been made to the evidence adduced by Dr. Thurnam in proof of the existence of a distinct ethnical type, contemporaneous with the British brachycephali, as shown by a rare class of characteristic dolichocephalic skulls, first noted by him in a long chambered barrow at West Kennet, in Wiltshire. Subsequent research showed this type of head to be peculiar to a class of long barrows enclosing megalithic, chambered catacombs. But alongside of the dolichocephalic occupants of these tombs were also other skulls of much less elongated form ; and in repeated instances fractured by deep clefts and gashes ; the evidence, as is assumed, of their immolation at the obsequies of their chiefs. They are not only different in form, but of a coarser type ; so as to suggest the idea either of captives or dependants of diverse race, or serfs of less pure blood than their lords. The circumstances under which the rare dolichocephalic Peruvian type of skull has been found seem analogous to this ; and suggest the idea—according with the Peruvian traditions of an older race—of a long-headed, patrician class lording it over the brachycephali who constituted the great mass of the Peruvian population. Such is a relation of races distinct in physical type which was well calculated to originate a process of cranial deformation, designed to transform the plebeian into the patrician head-form.

Mr. Blake was led to the opinion he finally adopted of the existence of two distinct types of Peruvian skull chiefly from the study of numerous specimens which fell under his notice among the cemeteries of the great desert of Atacama ; and, having enjoyed the advantage of his co-operation in comparing the selected examples brought home by him with others included in the extensive collection formed

by the late Dr. J. C. Warren of Boston, I have the more confidence in stating the following conclusions.

The dolichocephalic Peruvian skull is generally small and narrow. In several of those which I have measured, the average distance from a vertical line drawn from the meatus auditorius externus to the most prominent part of the frontal bone was only 2·7 inches, while from the same line to the most prominent part of the occipital bone it was 4·3 inches. In characteristic examples of this form of head fully two-thirds of the cavity occupied by the brain lie behind the occipital foramen, and the skull, when poised on the mastoid processes, falls backward. Compared with undepressed brachycephalic skulls, the forehead is low and retreating; and the temporal ridges approach near each other at the top of the head: a much larger space being occupied by the temporal muscles, between which the skull seems to be compressed. The zygoma is larger, stronger, and more capacious, and the whole bones of the face are more developed. The superior maxillary bone is prolonged in front, and the incisor teeth are in an oblique position. The bones of the nose are prominent, the orifices larger, and the cribriform lamella more extensive. The bony substance of the skull is thicker, and the weight greater. Some of those characteristics would require to be determined from the minute comparison of a much larger number of skulls before they could be accepted as generic characteristics; but a sufficient number of them have been observed to satisfy me that the elements of difference between the Peruvian brachycephalic and dolichocephalic skulls amount to something greatly more radical than could be effected by any artificial change in form. The woodcut (Fig. 119) illustrates the characteristics of the elongated Peruvian skull, as exhibited in one of those brought by Mr. Blake from an ancient cemetery on the Bay of Chacota; and Table III. includes three crania, selected by him from a very large number as fair average specimens of this type of skull. It is not at all

necessary for the confirmation of the opinion, reasserted here, of the existence of two essentially distinct types of Peruvian crania, to assume that the form of the elongated skull never owes any of its peculiarities to artificial compression. Both forms of cranium generally bear unmistakable evidence of having been more or less distorted by this process. The depressed frontal bone has, in many cases, been produced or exaggerated by such means; and wherever this has been carried to a great extent, it is accompanied not only by a corresponding modification of the posterior portion of the cranium, but also by a lateral expansion of the parietal bones, which almost invariably exhibit considerable in-



FIG. 116. — Peruvian Dolichocephalic Skull.

equality and unsymmetrical variation between the two sides. The examples of unmodified crania included among those brought from Ancon, and now in the Peabody Museum, are of value as showing the natural head-form of the true brachycephalic Peruvian race. Dr. Jeffries Wyman described them as "quite symmetrical, and the occiput, instead of being flat, or assuming a more or less vertical direction, as in the distorted crania, has the ordinary natural curves, and in some of them is prominent. The forehead is naturally developed in all except two, where it is quite low and retreating." Fig. 117 illustrates the com-

monest results of simple compression, when applied to the brachycephalic head, by means of which the frontal bone is flattened obliquely, and the whole cerebral mass is thrown back ; until in extreme cases, as among the Chinooks on the Columbia River, the skull resembles that of a dog. In other cases, hereafter referred to, the pressure applied equally in opposite directions, compresses the skull antero-posteriorly, till it becomes an elevated disc ; or forces it into irregular and monstrous deformities. The prematurely ossified sutures frequently show the arrestment of osseous development ; but even in such examples of modified conformation, some distinctive traces of the normal type generally indicate the ethnical group to which they belong.

Among the numerous interesting illustrations of Peruvian characteristics obtained by Mr. Blake from ancient cemeteries on the Pacific coast, the most valuable for the purpose now on view, are the skulls of two children, both of the elongated type ; but the one very slightly modified, while the other betrays manifest traces of artificial deformation. It is impossible to examine the former without feeling convinced that it illustrates a type of head entirely distinct from the more common brachycephalic crania ; while the latter shows the changes wrought by compression, very considerably altering its shape and relative development, but still leaving no doubt as to its generic dolichocephalic proportions. Figures 120, 121, exhibit the unmodified skull.

It is characterised here as normal. The depression immediately behind the coronal suture is probably due to a bandage or head-dress, but the form is little affected. The vertical view, Fig. 121, shows the well-balanced proportions of the frontal and occipital regions ; in striking contrast to the compression of the forehead, and the tumid swelling of the parieto-occipital region, in Fig. 123. It is the skull of a child, which, judging chiefly from the state of the dentition, may be pronounced to have been about seven years of age. It is a well-proportioned symmetrical head, and presents

the most striking typical contrast, when compared with Fig. 118, an unaltered juvenile skull of brachycephalic type from the Peruvian cemetery of Santa.

The other skull, exhibited in Figures 122, 123, is also of the dolichocephalic type, but considerably altered by com-



FIG. 120.—Peruvian Child's Skull, Normal

pression. The forehead is depressed, and the frontal suture remains open. It is that of a child of about five years of age, and is proportionally less; but as the process of cranial compression is completed in infancy, and the subsequent

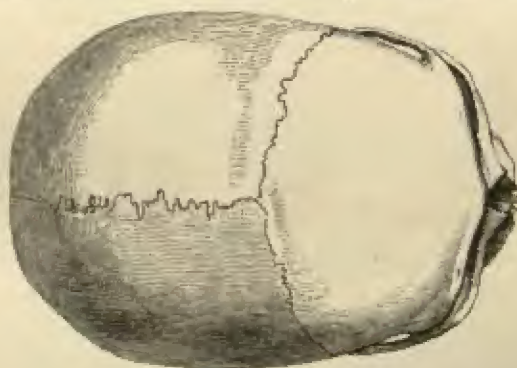


FIG. 121.—Peruvian Child's Skull, Normal.

tendency is towards a return to the congenital form, those juvenile skulls illustrate the changes wrought by such means even more effectually than adult crania. The comparative measurements are as follows. The first column exhibits the

relative proportions of the normal dolichocephalic Peruvian child's skull, Fig. 120, the smaller measurements in the second column indicate those of the compressed skull, Fig. 122; and the third column presents those of another skull of a child, also about five years old, and of the same type, procured from that part of the sandy tract of Atacama which is nearest Arica, and therefore from the same locality explored by Mr. Blake. It is engraved in the *Crania Americana*, Plate II.; and contrasts strikingly with the Santa juvenile cranium, Fig. 118, the measurements of which occupy the fourth column:—

Longitudinal diameter,	. . .	6.6	6.1	6.9	5.4
Parietal diameter,	. . .	4.6	4.4	4.5	5.4
Frontal diameter,	. . .	3.3	3.1	3.7	4.0
Vertical diameter,	. . .	4.8?	4.3?	4.3	4.6

From observations carried on in the cemeteries of Peru, Mr. Blake was led to the conclusion that the distinguishing traits, thus far noted, between two classes of the ancient Peruvians, are not limited to the crania, but may be dis-



FIG. 122.—Peruvian Child's Skull, Almonacid.

cerned in other traces of their physical organisation. In describing those of the short or brachycephalic type of cranium, he adds: "The bones of the latter struck me as larger, heavier, and less rounded than those of the former (the elongated crania), and in the larger size of the hands

and feet they also present a noticeable difference. The remarkable narrowness and delicacy of the hands, and the long and regularly formed finger-nails of the former, are strong evidence that they were unaccustomed to severe manual labour, such as must have been required for the construction of the great works of which the ruins remain. In all the cemeteries examined, where skulls of the rounded form have been found, those which are elongated have also been obtained." Remembering, however, that the sepulchral rites of the royal and noble Inca race were commonly accompanied by human sacrifices, it is in no degree surprising

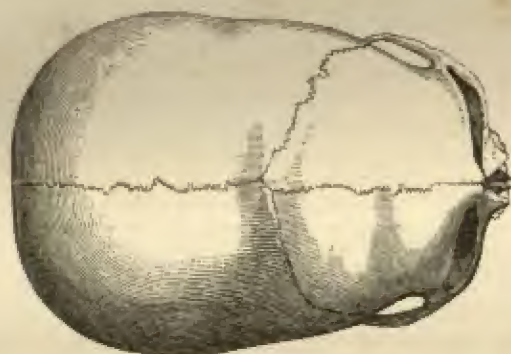


FIG. 125. —Peruvian Child's Skull, Abnormal.

that the skulls of the two distinct classes, noble and serf, should be found deposited together in the same grave. After a minute comparison of all the brachycephalic Peruvian crania in the Morton collection, it appears to me that these also admit of subdivision into two classes distinguished by marked physiognomical diversity, corresponding in some respects to the characteristics recognised by M. Pruner-Bey as furnishing evidence for a subdivision of the ancient crania of Egypt into two ethnical groups, which he designates *type fin* and *type grossier*. The bones of the face in the one are small and delicate, while the other exhibits the characteristic Mongol maxillary development and prominent

cheek-bones. In the following table, Nos. 1-4 are the carefully selected examples procured by Mr. Blake during his journey in Peru, the others are from the Boston and Philadelphia collections :—

TABLE III.—PERUVIAN DOLICHOCEPHALIC CRANIA.

	LOCALITY.		L. B.	P. D.	P. D.	V. B.	L. A.	L. I.	P. F. A.	H. C.
1.	Atacama,	M.	7.2	5.2	3.6	5.1	...	...	...	...
2.	"	M.	7.3	4.9	3.3	4.9	...	...	...	...
3.	"	M.	7.0	4.7	3.2	5.1	...	...	...	...
4.	"	M.	7.1	5.2	3.2	5.0	14.1	4.0	15.0	20.0
5.	S. of Arica,	M.	6.9	5.3	3.6	5.2	14.6	4.0	...	19.8
6.	Peru,	M.	7.2	5.3	3.5	5.6	14.6	4.0	...	20.0
7.	"	M.	7.0	4.9	3.0	5.3	14.0	4.1	...	19.0
8.	"	F.	7.2	5.1	3.5	5.2	13.9	4.0	...	20.0
9.	Arica,	M.	7.3	5.3	4.3	5.3	14.0	4.3	15.0	19.8
10.	Atacama,	M.	7.2	5.5	4.4	5.1	14.8	4.1	13.7	20.2
11.	Titicaca,	M.	6.8	5.4	4.8	5.3	14.8	4.2	...	19.4
12.	Royal Tombs,	F.	6.8	5.2	3.8	5.3	14.1	4.0	...	19.4
13.	Pachacamac,	M.	6.8	5.4	4.5	5.3	14.7	4.2	14.1	19.5
14.	Peru,	F.	5.8	4.0	2.8	3.9	14.8	...	14.0	19.6
15.	"	M.	6.0	4.0	3.0	3.9	14.9	...	14.9	19.9
16.	"	M.	6.3	3.8	2.6	3.5	14.5	...	14.5	19.8
	Mean		6.49	4.95	3.57	4.94	14.45	4.10	14.46	19.72

In some rare cases not only are crania of divers forms found in the same grave, but the head appears to have been embalmed, and deposited separately in the tomb alongside of bodies interred in the more usual way. In Plate i. of the *Crania Americana*, Dr. Morton has introduced a view of an embalmed head recovered by Mr. Blake from the Peruvian cemetery at the Bay of Chacota, but without giving any detailed description of it, though in several respects it is very remarkable. It is from the same locality as the crania already described, where it lay in its present condition, detached, and carefully preserved without the body. It appears to have been prepared by desiccation, without the use of resins or other antiseptics, and was enveloped in a thick cotton bag. From the manner in which the neck is drawn together, the preservative process to which it was

subjected must have been applied very soon after death. It is unique, so far as the observations of its finder extend, and presents some striking points of dissimilarity to any of the crania already described; but its form has probably been modified by artificial means. The abrupt prominence of the superciliary ridge is increased by compression on the forehead, which has depressed the os frontis, and given greater lateral width to the head. It is remarkable also for its great height compared with its diameter. Measured from the most prominent part of the os frontis to the extreme projection of the occiput, it is 6·4 inches; from the most prominent protuberances of the parietal bones the diameter is 5·8 inches, and vertically, from a horizontal line drawn across the orifice of the ear to the highest part of the head, is 5·2 inches. The forehead is broad and high, and the nose prominent; the cheek-bones are strongly developed, the alveolar edges of the jaws obtusely arched in front, and the incisor teeth stand in a vertical position. The hair, which is brown, and slightly grey, is remarkably fine, waved in short undulations, with a tendency to curl. It has been neatly braided, and several of the plaited braids are passed across the forehead, for which purpose they have been lengthened by the addition of false hair, so ingeniously joined as nearly to escape detection.

The teeth in this head, and in all the adult Peruvian skulls examined, are much worn. The incisors are ground down from their cutting edge to a broad flat surface, and the cuspidati have assumed a similar appearance. It is a condition common to the crania of primitive races where simple diet preserves the teeth, subjecting them to attrition without exposing them to decay. A nearly similar appearance is presented in those from ancient British barrows and cromlechs; though variations in the character of the food are sometimes traceable by means of corresponding changes on the teeth. The Walla-walla Indians on the Columbia river occupy a barren waste, where they suffer

greatly from the drifting sand. They subsist almost entirely upon salmon, dried in the sun, which, during the process, becomes filled with sand to such an extent that it wears away the teeth with great rapidity. It is rare, indeed, to meet with a Walla-walla Indian much beyond maturity whose teeth are not worn down to the gums. The corresponding attrition of the Peruvians' teeth Mr. Blake ascribes to a habit, still prevalent among the Indians, of chewing the leaf of the coca, mixed with a substance they call *llute*, made by compounding the wild potato with calcined shells and ashes obtained from plants rich in alkali.

Other points of interest relating to the ancient Peruvians have had fresh light thrown on them by the study of recent large additions to the available materials for determining the characteristics of the Peruvian head-form. Mr. Hutchinson draws attention to two among the skulls procured from Pasamayo, in which the frontal suture remains open; and he notes another example among those sent by him to Professor Agassiz. A striking illustration of the same peculiarity is shown in the child's skull, Fig. 123.

Among the more noticeable facts disclosed by the specimens now in the Peabody Museum, are several examples of recovery from extensive fractures, involving injury to the brain; and in one instance, a portion of bone has been removed by artificial means, so as to exhibit a process analogous to trepanning. Another, and perhaps more curious example of the same class was brought under the notice of the Anthropological Society of Paris by M. Broca, in a skull taken from an Inca cemetery in the valley of Yucay, twenty-four miles east of Cuzco, in which four linear incisions have been made in the frontal bone, and a square piece of the skull removed. We are thus led to infer that the art of surgery was practised with boldness, and considerable skill, among the ancient Peruvians.

But an inquiry into the physical characteristics of the Peruvian nation is not necessarily limited to the cranial or

the osteological remains recoverable from its ancient cemeteries. Like the Egyptians, the Peruvians applied their ingenious skill to render the bodies of their dead invulnerable to the assaults of "decay's effacing fingers;" and, like the inhabitants of the Nile Valley, they were able to do so under peculiarly favourable circumstances of soil and climate. The colours on Egyptian paintings, and the texture of their finer handiwork, which have shown no trace of decay through all the centuries during which they have lain entombed in their native soil or catacombs, fade and perish almost in a single generation when transferred to the humid climate of Paris or London. The natural impediments to decay probably contributed, alike in Egypt and Peru, to the origination of the practice of embalming. The cemeteries already referred to are situated in a region where rain seldom or never falls; and the dryness of the soil and atmosphere, when added to the impregnation of the sand with nitrous salts, almost precludes the decay of animal or vegetable matter, and preserves the finest woollen and cotton textures, with their brilliant dyes undimmed by time. By the same means we are able to judge of the colour and texture of the hair, the proportions and delicacy of the hands and feet, and the comparative physical development of two seemingly different races at various stages, from infancy to mature age. When we pass from the southern continent of America to the seats of ancient native civilisation lying to the north of the Isthmus, a different class of evidence, in like manner, enlarges our range of observation. The artistic ingenuity of the ancient Peruvian potter has left valuable memorials of native portraiture; the Mexican picture-writing, sculptures and terra-cottas, in like manner contribute important evidence illustrative of the physiognomy and physical characteristics of the ancient races of Anahuac; while the elaborate sculptures and stuccoed bas-reliefs of Central America perpetuate records of a race differing essentially from the modern Indian.

The traditions of the Mexican plateau pointed to the comparatively recent intrusion of the fierce Mexican on older and more civilised races; and various observers have at different times been tempted to trace associations between the ancient Mound-Builders of the Ohio, the elder civilised race of Mexico, and the Peruvians whose peculiar remains are recovered from the tombs around Lake Titicaca. The predominant Mexican race, at the era of the Conquest, appears from evidence of various kinds, including the portraiture in ancient native paintings and terra-cottas, to have been derived from one of the great stocks of the Red Indian tribes of the northern continent. The features represented in the Mexican paintings are thoroughly Indian, with the exception of the remarkable Dresden Codex: where, on the contrary, a striking correspondence is apparent between its portraiture and the bas-reliefs of Palenque. A comparison of the terra-cotta figured here, from the original in the



FIG. 124.—Terra-cotta, Bay of Honduras.

collection of the Society of Antiquaries of Scotland, with others already produced in previous chapters, from various localities, illustrates the same ethnic diversity. This example was found in a tumulus on the Bay of Honduras, and as strikingly corresponds to some of the Mexican paintings as the majority of the Mexican terra-cottas differ from them. The seats of ancient civilisation, both in Asia and Europe, were confined, through all their earliest historic ages, to

fertile and genial climates and warm latitudes. The north contributed the hardy barbarians to whom, in their degeneracy, they became a spoil and a prey. It is only in modern times

that Transalpine Europe has given birth to a native civilisation; while in Asia its northern latitudes still remain in the occupation of wandering hordes, descended from the spoilers who ravaged the elder empires of Asia, and shared with the barbarians of Europe in the dismemberment of Rome.

It is not from any mere accidental coincidence that we are able to recover traces of a nearly similar succession of events in the New World. Civilisation took root for a time in the Mississippi Valley, whether self-originated, or as an offshoot from the more favoured scenes of its mature development; but the great plateaus of Mexico and Peru were like well-provisioned and garrisoned strongholds, where the spontaneous fertility of tropical climates relieved the wanderers who settled there from the all-absorbing struggle which elsewhere constitutes the battle with nature for life; and the physical character of the country protected them alike from the temptations to wander, and the instability of settled communities in the midst of savage tribes. Yet they could not escape the vicissitudes which have befallen every nation whose wealth and luxury have so far surpassed the acquisitions of its neighbours as to tempt the cupidity of barbarian spoilers; and the beautiful valleys of Mexico appear to have experienced successive revolutions akin to those which render the ethnology of Italy's smiling soil and delightful climate so complicated and difficult. There are traditions of Olmees, Miztecas, and Zapotecs, all highly civilised precursors of the ancient Toltecs, who entered on the plateau according to most authorities about A.D. 600; and whose independent rule is supposed to have endured for nearly four and a half centuries. Then came the migration from the mythic Aztalan of the north, and the founding of the Aztec monarchy. The details of such traditions, with their dates and chronology, are of little value. But the general fact of a succession of conquering nations, and the consequent admixture of tribes and races, cannot be doubted. The civilised countries

beyond the southern isthmus may have contributed some of them, and the dispersed Mound-Builders of Ohio may have been the intruders of other centuries; while the regions immediately surrounding the high valleys more frequently furnished the invading spoilers. But one result is to throw considerable uncertainty on any inferences drawn from cranial observations, unless deduced from numerous instances, accompanied with accurate data as to the circumstances and probable age of the exhumed remains. Of the crania obtained by Dr. Morton, only eight were of older date than the Conquest; and the names of Toltec, Aztec, and other national distinctions are frequently attached to such on no satisfactory grounds. A general uniformity is traceable in a considerable number of Mexican crania, but not without such notable exceptions as to admit of their division also into distinct dolichocephalic and brachycephalic groups, as in the following tables:—

TABLE IV.—MEXICAN DOLICHOCEPHALIC CRANIA.

	LOCALITY.	L. B.	F. D.	F. N.	V. D.	I. A.	I. L.	O. P. A.	N. C.	
1.	Mexico,	M.	7.1	5.0	3.8	5.5	...	4.2	...	19.8
2.	Otumba,	M.	7.1	5.6	4.6	5.5	15.5	4.1	15.0	20.2
3.	Cerro de Quesilas, . .	M.	7.1	5.7	4.4	5.2	15.9	4.0	14.0	20.5
4.	Acapacingo,	F.	6.9	5.2	4.2	5.4	14.5	4.1	14.0	19.2
5.	Tacuba,	M.	7.1	5.6	4.5	5.4	15.2	4.3	14.2	20.0
6.	"	M.	7.0	5.3	4.3	5.3	14.5	4.1	14.0	20.0
7.	Mexico,	M.	7.0	5.4	4.3	5.3	15.0	4.1	14.0	19.8
8.	"	M.	7.1	5.5	4.4	5.2	15.8	4.1	14.0	20.4
	Mean,		7.05	5.41	4.31	5.35	15.20	4.12	14.17	19.99

Of Table iv., No. 1 is in the collection of Dr. Mason Warren of Boston, where it is simply marked "Mexican, ancient." No. 2, from an ancient tomb at Otumba, in Mexico, is noted by Dr. Morton (Plate LXL) as "approaching nearer to the Caucasian model, both in proportions and in facial angle." No. 3, on the same authority, is characterised as "a relic of the genuine Toltecan stock, having been exhumed from an ancient cemetery at Cerro de

Quesilas, near the city of Mexico." No. 4 is from another ancient tomb near that city, which also yielded some of the remarkable terra-cottas, pottery, masks, etc., previously referred to, now preserved along with it in the collection of the American Philosophical Society at Philadelphia. The remainder are in the collection of the Academy of Natural Sciences there.

TABLE V.—MEXICAN BRACHYCEPHALIC CRANIA.

	LOCALITY.		L. D.	P. D.	F. D.	V. D.	L. A.	L. L.	O. F. A.	H. C.
1.	Mexico, . . .	M.	6.6	5.8	3.9	5.9	14.7	4.3	...	20.0
2.	" . . .	M.	6.6	5.7	4.0	...	15.0	...	14.5	20.0
3.	Otumba, . . .	M.	6.3	5.3	4.4	5.4	14.3	4.2	13.5	19.2
4.	" . . .	M.	6.6	5.3	4.4	5.4	14.0	4.0	14.0	19.3
5.	Tacuba, . . .	M.	6.8	5.5	4.6	6.0	15.6	4.4	14.6	19.9
6.	San Lorenzo, . .	M.	6.4	5.7	4.5	5.4	14.6	4.5	13.5	20.2
7.	Mexico, Madero, .	M.	6.6	5.3	4.3	5.2	14.6	4.1	13.6	19.0
	Mean, . . .		6.56	5.51	4.30	5.55	14.69	4.25	13.95	19.66

The brachycephalic group (Table v.) is also derived from crania in the Boston and Philadelphia collections. A comparison of those tables, along with incidental comments of Dr. Morton on some of the more remarkable examples, suffice to show how little dependence can be placed on any theory of homogeneous cranial characteristics pertaining to the races of Anahuac. From such evidences of the diversity of cranial type, which are found alike within the Mexican and Peruvian limits, we may admit, with the less hesitation, that a certain conformity may be traced between some of the ancient Mexican and Peruvian skulls and those of northern barbarous tribes. Notwithstanding the greater apparent proximity of Mexico than Peru, both its geographical position, and its political and social condition, have rendered it much less accessible; and cranial data illustrative of the races of the Mexican plateau have hitherto been rare. The great collection of the Academy of Natural Sciences of Philadelphia is furnished with ample materials for the study of Peruvian craniology, and has been largely

augmented in this department since Dr. Morton's death ; but it is still very imperfectly supplied with illustrations of the more complicated ethnic characteristics of the Mexican plateau, and has no materials derived from the ancient cemeteries of Central America. Until intelligent Mexican observers carry out observations on the spot, and classify the ancient crania by means of archæological and other trustworthy evidence, so as to furnish some means of determining what is the typical Olmec, Toltec, and Aztec cranium, no satisfactory comparisons can be drawn between ancient Mexican crania and the corresponding types of the barbarous northern tribes. Unfortunately, the Spanish-American colonists of Mexico, Yucatan, and Central America, have hitherto, with a few honourable exceptions, rather impeded than co-operated in any investigations calculated to throw light on the history and ethnology of those remarkable seats of a native American civilisation ; and the political convulsions of recent years hold out little prospect of any attention being devoted to the requirements of science.

The Peruvians and Mexicans, with the ancient populations of Central America and Yucatan, constitute the Toltecan family, one of the two great divisions into which Dr. Morton divided his one American "race or species." The nations lying to the north of those seats of a native civilisation were all classed by him into a distinct family of barbarous tribes, resembling the other in physical, but differing from it in intellectual characteristics. Yet, as we have seen, even Dr. Morton recognised some differences among them ; and Professor Agassiz referred to their tendency to split into minor groups, though running really one into the other. The annexed tables, however, will show that the differences are of a far more clearly defined nature, and in reality embrace well-marked brachycephalic and dolichocephalic forms ; while of these, the latter seems the most predominant. The examples are chiefly derived

from the Philadelphia collection, though with additional illustrations from the Boston as well as from Canadian collections. Table VI., which illustrates the form of head

TABLE VI.—AMERICAN DOLICHOCEPHALIC CRANIA.

	SEX	M.	F. D.				I. A.			
			L. D.	P. D.	F. D.	V. D.	I. A.	I. L.	O. F. A.	H. C.
1.	Seminole,	M.	7.1	5.6	4.7	5.5	15.0	4.1	14.8	20.3
2.	"	M.	7.3	5.9	4.6	5.8	15.9	4.4	15.3	20.7
3.	"	M.	7.0	5.6	4.7	5.4	15.0	4.1	14.7	20.2
4.	"	M.	7.3	5.6	4.2	5.6	15.2	4.7	15.0	20.4
5.	"	M.	7.0	5.9	4.5	5.8	14.7	4.6	14.2	20.5
6.	Cherokee,	F.	7.2	5.2	4.2	5.5	14.5	4.0	14.6	20.2
7.	"	F.	7.0	5.3	4.1	5.4	14.5	4.0	14.0	19.5
8.	"	M.	7.2	5.3	4.3	5.3	14.1	4.5	14.0	19.1
9.	Choctaw,	M.	7.2	5.0	4.2	5.5	14.6	3.9	14.7	19.2
10.	Sauk,	F.	7.4	5.9	4.6	5.5	15.3	4.7	14.2	20.2
11.	Ottigamie,	M.	7.0	5.9	4.7	5.5	15.0	4.2	14.2	20.9
12.	Chippewa,	M.	7.3	5.8	4.8	5.5	15.1	4.6	14.2	20.9
13.	"	M.	7.2	5.5	4.3	5.5	14.8	4.1	14.6	20.2
14.	Potawatomie,	M.	7.8	5.7	4.4	5.3	16.0	4.0	15.8	22.1
15.	Mississauga,	M.	7.0	5.2	4.3	5.2	13.8	4.1	14.2	19.5
16.	Delaware,	M.	7.8	5.4	4.6	5.1	14.4	4.2	14.5	20.0
17.	"	M.	7.0	5.5	4.4	6.2	15.6	4.3	16.0	21.5
18.	Miami,	M.	7.6	5.3	4.3	5.5	15.0	4.1	15.5	20.5
19.	"	M.	7.3	5.5	4.3	5.5	14.6	4.6	14.9	21.0
20.	Naumkeag,	M.	7.4	5.5	4.4	5.9	15.0	4.3	14.0	...
21.	"	M.	6.9	5.0	4.2	5.3	14.3	3.9	14.4	19.8
22.	Assinaboime,	M.	7.6	5.8	4.6	5.1	14.9	4.3	14.9	21.2
23.	"	M.	7.5	5.7	4.4	5.2	14.7	4.6	14.7	20.8
24.	Mandan,	F.	7.1	5.4	4.3	5.1	14.2	3.8	14.6	20.0
25.	"	F.	7.0	5.3	4.1	5.3	13.9	4.2	14.1	19.8
26.	Ricars,	M.	7.0	5.2	4.1	5.1	13.5	4.0	14.0	19.5
27.	Mingo,	M.	7.1	5.5	4.5	5.2	14.7	4.1	14.5	20.2
28.	Menominee,	M.	7.1	5.8	4.1	5.5	14.7	4.0	...	20.3
29.	"	M.	7.1	5.4	3.9	5.2	13.3	4.4	...	19.3
30.	"	M.	7.5	5.4	4.0	5.5	14.5	4.2	...	20.6
31.	Minetari,	M.	7.3	4.4	4.4	5.1	14.1	4.1	14.7	20.2
Mean,			7.24	5.47	4.36	5.42	14.67	4.23	14.62	20.29

most widely diverging in proportions from the theoretical type, shows in reality the prevailing characteristics of the north-eastern tribes of the North American continent, and could easily be greatly extended. The opposite or brachycephalic cranial formation is illustrated in Table VII.

TABLE VII.—AMERICAN BRACHYCEPHALIC CRANIA.

	TRIBE.	L. B.	P. B.	F. D.	V. D.	L. A.	L. L.	O. P. A.	H. C.
1.	Muskogee,	6.8	5.8	4.2	5.6	15.4	4.3	15.0	20.0
2.	"	6.6	5.7	4.5	5.3	15.3	4.5	14.0	20.4
3.	Uchee,	6.8	5.4	4.3	5.5	15.0	4.4	14.3	20.1
4.	Minzi,	6.7	5.0	4.2	5.3	14.0	4.1	13.8	19.3
5.	Natick,	6.7	5.2	4.1	5.7	14.5	4.1	14.3	19.0
6.	"	6.7	5.2	4.3	5.3	14.2	3.9	14.1	19.1
7.	Dacota,	6.7	5.7	4.2	5.4	14.7	4.4	13.5	19.8
8.	"	6.8	5.7	4.3	5.5	15.1	4.4	14.4	20.1
9.	Pawnee, F., . . .	6.6	5.4	4.4	4.9	13.7	4.3	13.0	19.1
10.	"	6.6	5.5	4.1	5.4	15.0	4.4	14.0	19.5
11.	"	6.5	5.5	4.0	5.4	14.8	4.4	14.1	19.3
12.	"	6.7	5.6	4.3	5.5	15.1	4.4	14.2	19.6
13.	Chetimachee, . . .	6.5	5.7	4.3	5.9	15.5	4.1	14.0	19.1
14.	Chimuyan,	6.5	5.4	4.2	5.2	14.3	3.8	13.4	18.8
15.	Onage,	6.6	5.7	4.3	5.2	14.8	4.7	13.8	19.5
16.	"	6.5	5.9	4.6	5.3	15.1	4.1	13.4	19.5
17.	Creek,	6.9	5.7	4.6	5.4	15.5	4.7	14.4	20.4
18.	Choctaw,	6.5	5.1	4.0	4.7	12.5	4.1	13.0	18.7
19.	"	6.4	5.1	4.0	5.1	14.0	4.0	...	19.7
20.	"Ohio Mound," F., .	6.4	5.3	3.9	5.0	14.2	4.0	...	19.0
21.	Goajiro,	6.7	5.3	...	5.2	...	...	13.4	19.3
22.	"	6.5	5.1	...	4.9	...	...	13.0	18.5
	Mean,	6.62	5.45	4.24	5.30	14.63	4.25	13.85	19.44

But I now turn to the region around the northern lakes, where opportunities of personal observation first suggested to me the obvious discrepancies between the actual evidence disclosed by exhumation on the sites of native sepulture, and the theory of a typical unity manifested in the cranial characteristics of the most widely-separated tribes and nations of the continent. The Scioto Mound skull, characterised by Dr. Morton as "the perfect type of Indian conformation to which the skulls of all the tribes from Cape Horn to Canada more or less approximate," presents a remarkable development in various respects. It is a compact, short skull, in which nearly two-thirds of the cerebral mass lay in front of the *meatus auditorius externus*; whereas in the elongated Peruvian skull the proportions of the cerebral cavity shows that the larger mass of the brain lay behind the ear. These types may be considered

as representing the two extremes; but both of the great stocks between which the northern region around the great lakes has been chiefly divided since the first intrusion of Europeans, belong to the dolichocephalic division. Those are the Algonquins and the Iroquois, including in the latter the Hurons, who, with the Petuns, Neuters, and Eries, all belonged to the same stock, though involved in deadly enmity with each other. In the supposed typical Mound skull the longitudinal, parietal, and vertical diameters vary very slightly; and as the Mexican and Peruvian crania chiefly attracted Dr. Morton's attention, and are illustrated minutely, as a series, in his great work: it only required the further theory, which referred all the elongated skulls to an artificially modified class, to confirm in his mind the idea of one form of cranium pertaining exclusively to the New World.

To the theoretical type of a head very nearly corresponding in length and breadth, though not in height, the more numerous class of Peruvian and Mexican brachycephalic crania unquestionably approximate. Of one of the former, from the Temple of the Sun (Plate xl.), Dr. Morton remarks: "A strikingly characteristic Peruvian head. As is common in this series of skulls, the parietal and longitudinal diameter is nearly the same," viz., longitudinal, 6'1; parietal, 6'0; and, tested by this standard, he was even more justified in recognising marked points of correspondence between the Mound skulls, and what he calls "the Toltec branch of the American race," than might seem reasonable from the miscellaneous character of the crania referred to by him as "Mound skulls." But the moment the test of actual measurement is applied a very wide difference is apparent between the brachycephalic crania of the class referred to, and the prevailing form of head in many of the northern tribes, as among the Algonquins, Hurons, and Iroquois. The Algonquin stock are represented by Ottawas, Mississagas, Chippewas, and other tribes, within the area of Upper

Canada and along the shores of Lake Superior. Of living Indians belonging to Iroquois and Algonquin tribes I have examined, and compared by the eye, many at widely-scattered places, from beyond the Mississippi to the coast of Labrador. Physiognomically they present the large and prominent mouth, high cheek-bones, and broad face, so universally characteristic of the American Indian; but they by no means possess in a remarkable degree the wide massive lower jaw, which has been noted as of universal occurrence. The absence of the aquiline nose is also noticeable, as it is frequently a characteristic of the true Indian in contradistinction to the Esquimaux.

The eye may be fully depended upon for physiognomical characteristics; though it is of little service in testing minuter variations of cranial proportions, especially when dependent on observations made on the living head, covered with the thickly-matted and long coarse hair of the Indian. Nor are actual measurements readily obtained; for other obstacles even more difficult to surmount than such natural impediments to observation, interfere, and enlist superstitious fears in antagonism to the inquiries of science. I have been baffled repeatedly in attempts to induce an Indian to submit his head to the dreaded application of the callipers; and have found him not only resist every attempt, though backed by arguments of the most practical kind, but on the solicitation being pressed too urgently, have seen him tremble, and manifest such signs of fear, not unaccompanied with anger, as made retreat prudent. In other cases where the Indian has been induced to submit his head to examination, his squaw vehemently protested against the dangerous operation. The chief apprehension seems to be lest the secrets of the owner should be revealed to the manipulator; but this rather marks its more definite form in the mind of the christianised Indian. With others it is simply a vague dread of power being thereby acquired over them, such as Mr. Paul Kane informed me frequently

interfered to prevent his obtaining portraits of the Indians of the North-west, unless by stealth.

The following Table (VIII.) embodies the results of examinations of twelve living representatives of Algonquin tribes, including six Chippewas at the Indian reserve on Lake Couchiching, three Ottawas from Lake Huron, and three Abenakis from the St. Maurice :—

TABLE VIII.—ALGONQUIN INDIANS.

	NAME.	L. D.	F. D.	P. D.	I. M. A.	M. C.
1.	Kobsequan, . . .	7.4	6.0	5.0	14.8	22.3
2.	Nowkeisegwab, . . .	7.1	6.0	5.4	15.4	22.1
3.	Pahtahsega, . . .	7.3	5.8	5.4	15.0	22.6
4.	Shilling, Joseph, . . .	7.5	6.1	5.6	14.4	22.9
5.	Shilling, Jacob, . . .	6.9	6.0	5.1	14.7	22.0
6.	Snake, William, . . .	7.1	6.0	5.5	15.1	22.0
7.	Kahgoosega, . . .	7.4	5.8	5.0	15.2	21.6
8.	Ganahwahbi, . . .	7.2	5.9	4.8	14.0	21.8
9.	Assikinack, . . .	7.2	6.0	4.7	14.2	22.4
10.	Nanahmahbiquan, . . .	7.3	5.9	5.1	14.3	22.0
11.	Nowgosedah, . . .	7.2	6.0	5.4	15.0	22.3
12.	Mosunkirhine, . . .	7.4	6.6	5.0	14.2	22.4
	Mean, . . .	7.25	6.00	5.17	14.77	22.20

Some of the measurements of the living head are necessarily affected by the hair, always coarse and abundant with the Indian. Others again, such as the vertical diameter, cannot be taken. But the mastoid processes are sufficiently prominent to leave little room for error in the inter-mastoid arch; and this suffices to show the very exceptional approximation of the modern Algonquin head to the ancient type, in the proportional elevation of the vertex: in so far, at least, as it is illustrated by these examples. In the horizontal circumference some deduction must be made for the hair, to bring it to the true cranial measurement in all the living examples.

From the above measurements, along with other observations, the Abenakis and Chippewas appear to deviate less

markedly from the assumed characteristics of the American cranial type than other northern races ; and especially than is apparent on an examination of skulls belonging to the original Huron occupants of the greater part of the country around Lakes Simcoe and Couchiching, where the Chippewas more especially referred to are now settled.

The proportions thus given as characteristic of the widely diffused Algonquin stock place it in the dolichocephalic division, of which Tables XI., XII., XIII. furnish evidence suggestive of a generally prevailing divergence among the northern tribes from the more common Peruvian, and the supposed Mound type. The extent of this divergence will be no less clearly seen by referring to some of the most characteristic examples furnished in the *Crania Americana*. The radical variation from the assumed typical proportions is obvious, for example, in the Miami cranium : the head of a celebrated chief, eloquent, of great bravery, and uncompromising hostility to the whites ; and is equally apparent in those of the Potawatomes, the Blackfeet, Menominees, and the Delawares. In most of those of which measurements are given by Dr. Morton, the longitudinal diameter is nearly, and in some more than, two inches in excess, both of the parietal and vertical diameters ; and in other respects they differ little less widely from the characteristics of the brachycephalic crania.

Such are indications of data—derived from a source altogether unexceptionable in the present argument,—irreconcilable with the views so repeatedly affirmed, of a physiognomical, physiological, and, above all, a cranial unity characterising the whole ancient and modern aborigines of the New World. But the Algonquins, Iroquois, and Hurons of the St. Lawrence valley and the Lake regions, which have been recognised by many writers as specially typical of the predominant characteristics of the northern Red Indian, furnish evidence equally confirmatory of the diversified physical characteristics of American

nations. Of them Dr. Latham remarks : "The Iroquois and Algonquins exhibit in the most typical form the characteristics of the North American Indians, as exhibited in the earliest descriptions, and are the two families upon which the current notions respecting the physiognomy, habits, and moral and intellectual powers of the so-called Red race are chiefly founded."¹ In some respects, however, they present a striking contrast. The Algonquin stock, chiefly represented by the modern Chippewas, is only known to us as embracing rude hunter tribes; or where found under the protection of the government of the Dominion, and settled on the Indian reserves of Ontario, they illustrate in a remarkable manner the unstable condition of savage life prior to the introduction of any foreign disturbing elements : for they are, with very partial exceptions, more recent intruders than the Europeans ; and the extirpation of the aboriginal occupants of Canada is wholly ascribable to native wars.

In the brief interval between Cartier's first discovery of Canada, and its exploration and settlement by Champlain, the whole country between the Ottawa and Lake Simcoe appears to have been depopulated ; and the Wyandots and allied tribes, driven westward by their implacable Iroquois foes, were settled in palisaded villages in the country around Lake Simcoe and the Georgian Bay. The Hurons embraced four tribes, or nations, to which another was added in the seventeenth century. Among those agriculture was systematically pursued : probably with all the greater assiduity that the restriction of their hunting-grounds by the encroachments of the Iroquois must have made them more dependent on its resources. The allied nation of Tiontonnes occupied the region immediately to the south-west, in the high ground between the Georgian Bay and Lake Erie. The Niagara district was in like manner filled up by the Attiwendaronks or Neuters, of the same stock ; and all

¹ *Varieties of Man*, p. 333.

along the river banks and smaller lake shores, traces of Indian villages and cemeteries prove that at an earlier date the country was filled with a corresponding native population. The Wyandots, as they styled themselves, only became known to Europeans in their decline, and immediately before their extirpation. They were then in alliance with the Adirondacks against their common Iroquois foe, and probably a certain portion of the skulls found in Upper Canadian cemeteries belongs to the latter. But the Algonquin cranium, though less markedly dolichocephalic than the Huron or Iroquois skulls, belongs to the same class; and to one or other of those nearly all the Canadian crania may with little hesitation be assigned.

I had cursorily examined a considerable number of Indian skulls chiefly dug up within the district once pertaining to the Huron or Wyandot branch of the Iroquois stock, before my attention was fully drawn to the peculiar characteristics now under consideration. Since then I have carefully measured ninety-two Indian skulls belonging, as I believe, to the Wyandot or the Algonquin stock; and of this number have found only eight exhibiting such an agreement with the assigned American type, as, judged by the eye, to justify their classification as true brachycephalic crania, though a tendency to the pyramidal form, occasioned by the angular junction of the parietal bones, is apparent in many of them. One, a very remarkable and massive skull, turned up at Barrie, on Lake Simcoe, with, it is said, upwards of two hundred others, has already been referred to, and its vertical aspect compared with that of the Scioto Mound skull. It is shown here in profile, Fig. 125. It is a well-proportioned brachycephalic head, with a fair average frontal development, as tested by an Indian standard; but exhibiting the flattened vertical occiput so strikingly, that when resting on it, it stands more firmly than in any other position. This is, without doubt, the result of artificial compression; and in so far as fashion regulated the varying forms thus

superinduced on the natural cranial conformation, it is suggestive of an intruder from some southern tribe. No note has been preserved of the general character of the crania from which this one was selected, doubtless owing to its peculiar form. A minute examination of examples found in Canada fails to confirm Dr. Morton's assignment of the flattened occiput as a predominant characteristic of the American head, but rather confirms the idea of its artificial origin. This feature will therefore more fitly come under review in the following chapter, along with other results of cranial compression.



FIG. 135.—Barrie Skull: Profile.

The ethnical significance of occipital forms has been minutely discussed in a valuable monograph contributed by Dr. J. Aitken Meigs to the Transactions of the Academy of Natural Sciences of Philadelphia.¹ The conclusions he arrives at are: that the form of the human occiput is not constant, but varies even among individuals of the same race or tribe. He divides the different forms into three

¹ *Observations upon the Form of the Occiput in the Various Races of Men*, by J. Aitken Meigs, M.D. Philadelphia, 1860.

primary classes: 1st, The protuberant occiput, which is exhibited by the Esquimaux, Chippewas, Hurons, and more or less among thirty-six different American tribes or nations. 2d, The vertically flattened occiput—which is, no doubt, of artificial origin, though in many cases the undesigned result of the use of the cradle-board,—he assigns as more or less prevalent among sixteen tribes, and characteristic of the Mound-Builders. 3d, The full and rounded or globular occiput characterises nine American nations or tribes, and occurs occasionally in a greater number. But the final summary of Dr. Meigs goes further than this; and treating as it does of occipital formation generally, it very effectually deals with all theories of radical diversities of human varieties or distinct species, in so far as this sub-division of osteological evidence is concerned, by affirming, as the result of observations made on eleven hundred and twenty-five human crania, “that there is a marked tendency of these forms to graduate into each other, more or less insensibly. None of these forms can be said to belong exclusively to any race or tribe. None of them, therefore, can be regarded as strictly typical: for a character or form to be typical should be exclusive and constant.” In his elaborate observations, Dr. Meigs has still left untouched the peculiarities which distinguish the female occiput. One elongated protuberant form appears to me to be found only in the female head. Of the eleven symmetrical crania, which proved to be exceptional in this respect, out of the large Peruvian collection of Professor Agassiz, Professor Wyman remarks: “The occiput, instead of being flat, or assuming a more or less vertical direction, as in the distorted crania, has the ordinary natural curves, and in some of them is prominent.” All of those are below the average size, and probably female; but a comparative estimate of the occipital variations in the two sexes, as exhibited in the different races, is necessary to complete this interesting inquiry.

It is worthy of note, in reference to the American type

of skull, that, whereas Dr. Morton states, as the result of his experience, that the most distant points of the parietal bones are for the most part the parietal protuberances: on comparing fifty-one Canadian skulls, I have only found such to be the case in three, all of which were female. The widest parietal measurement is generally a little above the squamous suture, and in some examples a still wider diameter is found between the temporal bones. Somewhat minute observations, accompanied with measurements, of numerous examples in the unrivalled collection of the Academy of Sciences of Philadelphia, as well as in the collections at Washington and Boston, incline me to believe that this is a common characteristic of the American head.

The annexed tables (Tables IX.-XII.) of measurements of crania found in Canada exhibit their relative proportions in so far as this can be shown by such means. Embracing, as they do, indices of the comparative length, breadth, height, and circumference of ninety-nine skulls, procured without any special selection, from Indian cemeteries lying, with only four exceptions, to the north of Lakes Erie and Ontario: they supply a series derived from a sufficient number to indicate some constant proportions, and to mark certain elements of contrast instead of comparison, when placed alongside of the corresponding relative proportions in the tables of brachycephalic crania.

Of the native tribes of Canada the Hurons are the historical race. The French explorers of the St. Lawrence in the sixteenth century came in contact with the *Ouanedote*, or Wyandots, as they called themselves. They occupied the country between Lake Erie and the Georgian Bay; and one chief branch of them, the Hurons, occupied palisaded villages around Lake Simcoe. Their numbers were estimated by the Jesuit missionaries, in 1635, at thirty-thousand. In 1649 their country was desolated by the Iroquois; the miserable remnant was finally dispersed; no survivor of the race remained within their ancient territory;

and their deserted graves were left undisturbed till now. The remains, therefore, which have been recently recovered on the sites of their villages have a special value for ethnological purposes, owing to their freedom from the vitiating influences affecting tribes which have been long in contact with European traders or colonists.

In the interval since the last edition of this work appeared my opportunities for studying the special characteristics of the Huron head-form have been largely extended. Dr. J. C. Taché undertook, in recent years, an exploration of the sites of the French Huron missions between Lake Simcoe and the Georgian Bay. In the course of his investigations he opened sixteen ossuaries, each containing from six to twelve hundred skeletons; and along with these, numerous weapons, implements, pottery, stone and clay pipes, large tropical shells, and the like native relics. Copper kettles, iron tomahawks, glass beads, and other objects of European workmanship, told of traffic with the French missionaries and traders of the seventeenth century; while some rarer copper relics suggested traces of Mexican art. From the various ossuaries Dr. Taché selected upwards of eighty skulls, most of which are now in the Museum of Laval University. More recently I acquired eleven others from the same district, which, added to those previously under review, make in all one hundred and twenty-six crania derived from Huron graves, which I have had the opportunity of studying. The results of a careful measurement of the most characteristic examples are embodied in Tables ix. and x. Sundry long oval skulls illustrate the extreme variations in the dolichocephalic Indian head; and only one marked exception belongs to the brachycephalic class. The materials thus obtained embrace ample means for determining the special characteristics of the Huron cranium. It exhibits in an unusually marked degree the same deviation from the supposed typical American head, in the great preponderance of the longitudinal diameter, which distinguishes the Indians of the Iroquois

league. The Hurons and the Iroquois belonged to the same ethnical group, though they were at deadly enmity with each other; and the extirpation, and nearly total extinction of the Hurons, were due to their Iroquois foes. The ample materials thus accessible for testing the specialities of a single race are made use of in the following tables, where

TABLE IX.—HURON CRANIA: MALE.

	L. B.	P. B.	F. B.	V. B.	L. A.	L. L.	O. F. A.	H. C.
1.	7.50	5.70	4.50	5.60	15.60	4.20	15.00	21.10
2.	7.40	5.50	4.40	5.40	14.70	4.50	...	20.60
3.	7.30	5.70	4.20	5.70	15.30	4.30	14.11	20.80
4.	7.50	5.60	4.20	5.40	14.70	4.30	14.60	21.10
5.	7.20	5.30	4.30	5.30	14.50	4.30	14.30	20.30
6.	7.00	5.50	4.20	5.00	13.80	4.00	14.00	19.80
7.	7.30	5.30	4.30	5.30	14.40	4.20	14.20	20.40
8.	7.20	5.40	3.80	5.20	14.50	3.90	14.20	19.90
9.	7.70	5.40	4.70	5.60	14.60	4.20	15.00	21.40
10.	7.50	5.90	5.10	5.30	15.00	4.30	15.60	21.80
11.	7.60	5.50	4.50	5.40	14.60	4.50	14.90	21.30
12.	7.60	5.60	4.20	5.40	14.60	4.70	15.00	21.10
13.	7.50	5.60	4.40	5.50	15.60	4.30	15.20	21.40
14.	7.40	5.40	...	4.30	15.20	4.00	14.90	20.40
15.	7.60	5.20	3.90	5.60	14.80	4.50	15.20	20.50
16.	7.20	5.50	4.40	5.80	15.20	4.50	14.50	20.20
17.	7.60	5.60	4.50	5.60	15.40	4.20	15.00	21.40
18.	7.30	5.30	4.20	5.40	14.20	4.10	14.40	20.40
19.	7.80	5.60	4.60	5.90	15.50	4.50	15.60	21.30
20.	6.90	5.50	4.10	5.10	14.00	4.10	...	19.70
21.	7.40	5.40	4.20	5.20	14.50	4.40	...	20.70
22.	7.30	5.30	4.20	5.40	14.60	4.10	14.40	20.50
23.	7.30	5.60	4.40	5.30	14.50	4.90	14.40	20.20
24.	7.90	6.00	4.60	5.70	16.00	3.40	16.10	20.00
25.	7.40	5.60	4.60	5.50	15.00	4.40	15.00	20.90
26.	7.60	5.40	4.20	5.70	15.10	4.40	15.30	20.90
27.	7.50	5.30	4.20	5.70	15.10	4.20	14.60	20.40
28.	7.20	5.60	4.60	6.70	15.70	4.20	15.00	20.30
29.	7.60	5.50	4.70	6.00	15.70	4.60	15.00	21.20
30.	7.00	5.50	4.40	5.25	14.50	...	14.60	20.00
31.	7.12	5.55	4.00	5.35	14.75	...	14.25	20.25
32.	7.20	5.55	4.60	5.40	14.90	...	14.60	20.40
33.	7.35	5.40	4.35	5.20	14.30	...	14.40	21.60
34.	7.37	5.45	4.15	5.55	15.15	...	14.75	20.50
35.	7.60	5.25	4.00	5.55	15.00	...	15.12	20.75
36.	7.75	5.20	4.10	5.55	14.90	...	14.75	21.00
37.	7.50	5.70	4.00	5.95	16.00	...	15.50	21.25
38.	6.95	5.45	3.75	5.50	14.60	...	14.00	19.50
39.	7.12	5.50	4.10	5.12	14.30	...	14.35	20.20
Mean,	7.39	5.50	4.31	5.48	14.89	4.24	14.77	20.64

the results are classified according to sex.¹ Table ix. includes the measurements of thirty-nine male skulls, and Table x. the corresponding measurements of eighteen female skulls, along with the combined mean results thus derived from 57 crania, all probably pertaining to the same Huron race. They have been obtained without exception from Indian graves to the north of the water-shed between Lakes Erie, Ontario, and the Georgian Bay; and the greater number of them from ossuaries situated in the ancient country of the Hurons, from which the last of the race was extirpated in 1649.

The Barrie skull (Fig. 125) has already been referred to as one recovered from an ossuary in the Huron country; and yet so essentially distinct from the characteristic Huron type, that a careful study of one hundred and

TABLE X.—HURON CRANIA: FEMALE.

	L. B.	P. D.	F. D.	V. D.	L. A.	L. L.	O. F. A.	B. C.
1.	7.30	5.50	4.30	5.10	13.70	4.20	14.30	20.50
2.	6.80	5.20	4.00	5.20	13.30	3.80	13.70	19.00
3.	7.40	4.90	4.20	5.30	13.30	...	14.10	20.00
4.	7.20	5.20	3.90	5.00	14.10	3.60	14.20	19.70
5.	7.60	5.30	4.30	5.60	14.00	4.10	14.30	20.20
6.	7.50	5.20	4.10	5.10	13.40	4.20	14.80	20.50
7.	7.60	5.50	4.10	5.30	14.70	4.00	14.10	19.50
8.	6.80	4.80	4.20	5.00	13.60	4.00	13.20	18.90
9.	6.45	5.40	4.15	4.95	13.70	...	13.05	18.60
10.	6.80	5.20	4.20	5.20	14.10	...	13.95	19.40
11.	6.95	5.20	4.00	4.90	13.30	...	13.60	19.55
12.	7.00	5.35	4.10	5.12	14.25	...	13.50	20.00
13.	6.70	5.00	4.00	5.00	13.50	...	13.60	18.75
14.	7.20	5.10	4.20	5.30	13.90	...	14.20	20.00
15.	7.20	5.10	4.30	5.75	13.90	...	14.50	19.95
16.	7.11	5.30	3.80	4.90	13.50	...	13.50	19.30
17.	6.80	5.40	4.10	5.20	13.70	...	13.90	19.70
18.	6.90	5.30	4.10	5.30	13.90	...	14.20	19.60
F. Mean,	7.07	5.22	4.11	5.18	13.77	3.98	13.93	19.62
M. Mean,	7.39	5.50	4.31	5.48	14.39	4.24	14.77	20.64
Total } Mean, }	7.29	5.41	4.24	5.39	14.54	4.22	14.49	20.32

¹ For further details, *vide* "The Huron race, and its head-form;" *Can. Journ.*, vol. xiii. p. 113.

twenty-six crania from the same district, including extreme divergent forms, has not presented another example approximating to it. The divergent tendency is rather to the opposite extreme of the dolichocephalic type. I have not, therefore, included it in the accompanying Tables, as it should probably be regarded as that of the representative of some diverse Indian nation, adopted, it may be, according to Iroquois usage, into one of the Huron tribes. A comparison between the vertical view of this brachycephalic skull, Fig. 126, which so nearly reproduces the form selected by Dr. Morton as the perfect type of conformation of the

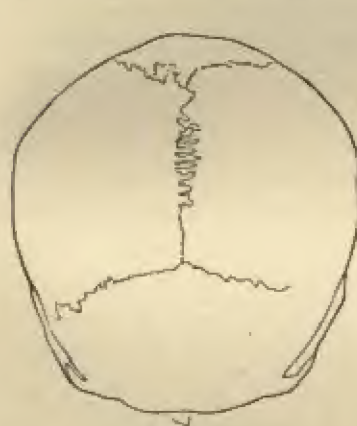


FIG. 126.—Barrie Skull.

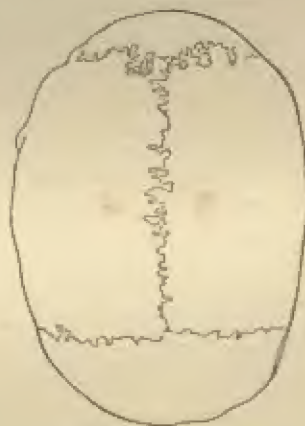


FIG. 127.—Long Huron Skull.

American Indian head; and one of the longest of the Huron skulls in the Taché collection of Laval University (Fig. 127), will show at a glance the striking contrast between the two extremes of the American brachycephalic and dolichocephalic head-forms. As in the case of the two Peruvian types, artificial compression has modified at least one of the forms. In this case, however, it has been applied to increase the natural characteristics of a brachycephalic head. But while both skulls were equally susceptible of distortion, it is inconceivable that any amount of compression could have

transformed the one to any near approximation to the other form.

The mean derived from the measurement of thirty-nine male Huron skulls is here placed alongside of those of the two extremes, and equally serves to illustrate the contrast between them :—

	L. B.	P. B.	F. B.	V. B.	L. A.	O. F. A.	H. C.
Barrie Skull, . . .	6.00	6.40	5.20	5.30	16.60	14.40	20.70
Long Huron, . . .	7.75	5.20	4.10	5.55	14.90	14.75	21.00
Huron M. Mean, . . .	7.39	5.50	4.31	5.48	14.89	14.77	20.54

Table XI. which follows, rests, in part, on different authority from the preceding ones. No. 1 supplies the proportions of the skull of the celebrated Mohawk chief, Joseph Brant (Tyendinaga), from a cast taken on the opening of his grave, at the interment of his son, John Brant, in 1852. Nos. 2 to 7 are from the *Crania Americana*, and include all the Iroquois and Huron examples given there. The latter more correctly represent the Wyandots of Detroit, who were descendants of the Petuns; and at the time of their settling there, had mingled with the Illinois, Ottawas, and other Algonquin tribes. Nos. 8 to 10 are ancient skulls from the island of Montreal, now in the

TABLE XI.—IROQUOIS CRANIA.

	TRIBE.	L. B.	P. B.	F. B.	V. B.	L. A.	L. E.	O. F. A.	H. C.
1.	Mohawk, Brant, . . M.	7.8	6.0	5.0	...	15.0?	...	...	22.0
2.	Oneida, 33, . . . M.	7.5	5.6	4.1	5.8	14.4	4.3	14.9	20.8
3.	Cayuga, 417, . . . M.	7.8	5.1	4.2	5.4	14.2	3.5	15.5	20.8
4.	Huron, 607, . . . F.	6.7	5.6	4.1	5.2	14.5	3.9	14.0	19.2
5.	" 15, . . . M.	7.2	5.3	4.3	5.5	15.0	4.4	14.2	19.8
6.	Iroquois, 16, . . . M.	7.5	5.5	4.5	5.7	15.2	4.5	15.1	20.8
7.	" A.N.S., . . . M.	6.8	5.4	4.2	5.3	14.3	4.0	14.1	20.0
8.	Iroquet, . . . F.	7.1	5.2	5.0	5.3	...	...	13.7	19.3
9.	" . . . M.	7.5	5.8	4.0	5.5	13.5	...	14.4	21.0
10.	" . . . M.	7.0	5.5	4.7	5.5	13.5	...	14.5	20.7
	Mean, . . .	7.29	5.50	4.41	5.47	14.47	4.27	14.40	20.44

Museum of McGill College, and correspond closely to the other crania of the Iroquois stock. As a whole it will be seen that these results agree in the main with those arrived at by my own independent observations; while a comparison of the Tables will be satisfactory to any who may still hesitate to adopt conclusions adverse to opinions reaffirmed under various forms by Dr. Morton, and adopted and made the basis of such comprehensive inductions by his successors.

The intimate relations in language, manners, and the traditions of a common descent, between those northern and southern branches of the Iroquois stock, render these Tables, in so far as they present concurrent results, applicable as a common test of the supposed homogeneous cranial characteristics of the aboriginal American, in relation to the area of the great lakes. But the measurements now supplied are only the more carefully noted data which have tended to confirm conclusions already suggested by the examination of a much larger number of examples, in addition to minute observations of living representatives of the Indian tribes. It will be seen moreover from an investigation of the materials which supplied the elements of earlier inductions, that only in the case of the ancient "Toltecan" tribes did Dr. Morton examine nearly so many examples; while in relation to what he designated the "Barbarous Race," to which the northern tribes belong, even in Dr. Meigs' greatly enlarged catalogue of the Morton Collection, as augmented since his death, the Seminole crania present the greatest number belonging to one tribe, and these only amount to sixteen.

In Table XII. corresponding measurements of thirty-two Canadian skulls are given, the whole of which have been obtained from graves lying to the south and east of the true Huron country, towards the shores of Lakes Erie and Ontario, or on the north bank of the St. Lawrence. Some

portions of Western Canada, including localities referred to, were occupied in the early part of the seventeenth century by tribes allied to the Hurons; but on their deserted areas the Algonquin tribes from the north and west have everywhere preceded the English settlers, and the greater number of the crania introduced in this Table may be assigned with little hesitation to Algonquin tribes. No. 24 is designated by Dr. Morton a Mississauga skull; and probably most, if not all, of those numbered consecutively from 16 to 28 belong to the same tribe. Nos. 29 to 32 are from

TABLE XII.—CANADA: ALGONQUIN CRANIA.

	LOCALITY.	L. L.	P. D.	F. M.	N. D.	T. A.	L. L.	O. P. A.	H. D.
1.	Windsor,	7.0	5.7	4.7	5.7	15.2	4.3	14.5	20.1
2.	"	7.0	5.7	4.5	5.7	16.1	4.0	14.4	20.1
3.	"	7.4	6.1	4.9	5.7	...	4.5	15.5	21.4
4.	"	6.6	5.3	4.2	5.5	14.5	4.2	13.5	19.0
5.	Burford,	6.5	5.2	4.1	5.0	13.4	4.0	13.0	18.4
6.	Grand River,	6.7	5.4	4.2	5.2	14.3	4.0	13.5	19.3
7.	"	7.5	5.6	4.4	5.4	15.0	4.1	15.2	21.0
8.	Burlington Bay,	7.0	5.3	4.4	5.3	14.0	4.0	13.0	19.5
9.	"	7.6	5.6	4.4	5.4	15.2	4.2	14.9	20.9
10.	Nelson, F.	7.5	5.2	4.2	5.5	14.0	4.6	15.0	20.4
11.	"	8.2	5.5	4.3	5.5	14.9	4.3	15.5	21.0
12.	"	7.7	5.9	5.3	5.4	15.0	4.7	15.3	21.5
13.	" F.	7.3	5.5	4.1	5.1	14.0	4.3	14.7	20.5
14.	" F.	7.3	5.4	4.0	5.2	14.4	4.3	14.4	20.5
15.	" F.	7.2	5.4	3.7	5.3	14.3	4.0	14.3	19.8
16.	River Humber,	7.6	5.9	5.7	5.5	15.4	4.7	14.2	21.1
17.	"	6.8	5.6	4.5	5.1	14.1	4.5	13.9	19.9
18.	"	7.5	5.5	4.2	5.3	14.5	4.2	14.3	20.3
19.	Burwick,	7.5	5.7	4.2	5.6	15.3	4.5	14.9	21.0
20.	"	7.2	5.1	4.4	5.6	14.3	4.3	14.7	21.0
21.	Peterboro',	7.7	5.5	4.9	5.3	15.4	4.6	15.0	21.1
22.	"	7.4	5.3	4.2	5.3	13.8	4.2	14.1	20.6
23.	"	6.5	5.2	3.9	4.9	13.3	3.8	13.7	19.2
24.	"	7.0	5.2	4.3	5.2	13.8	4.1	14.2	19.3
25.	Rice Lake,	7.1	6.5	3.9	6.3	14.5	4.3	14.2	20.0
26.	Bay of Quinte,	7.9	5.8	4.5	5.3	14.3	4.9	14.8	21.7
27.	"	7.0	5.5	4.2	5.0	14.0	4.6	13.9	20.5
28.	"	7.4	6.0	4.8	5.3	14.6	4.7	14.5	20.9
29.	St. Maurice,	7.0	5.3	4.1	5.3	13.0	4.4	14.0	20.5
30.	"	7.5	5.7	5.0	5.5	14.2	5.0	14.4	21.0
31.	"	7.0	5.5	4.7	5.5	14.0	4.2	14.5	20.7
32.	Three Rivers,	7.4	6.5	5.0	5.1	14.2	4.6	15.0	21.9
	Mean,	7.25	5.58	4.43	5.37	14.42	4.35	14.42	20.44

Abenakis graves on the St. Maurice. The examples thus grouped together present a sufficient number to furnish some adequate approximation to the typical specialities of the Algonquin head. They exhibit, it will be observed, a greater preponderance in the characteristic excess of longitudinal diameter than is shown in the cognate Chippewa heads of Table VIII.; though all alike pertain to the same dolichocephalic class, and essentially contrast with the familiar brachycephalic type of Peru, and of the Mississippi Valley mounds.

But the term Algonquin, though specially applied originally to certain Canadian tribes, is now used as a generic appellation of a very comprehensive kind, and embraces ancient and modern tribes extending from the Labrador and New England coasts to far beyond the head of Lake Superior. In this comprehensive use of the term, its application is chiefly based on philological evidence; and it points thereby to affinities of language connecting widely-severed nations throughout the whole area lying between the Rocky Mountains and the Atlantic.

The following Table (XIII.) includes the measurements of thirty crania of New England tribes, partly derived from the *Crania Americana*, and the remainder obtained directly from observations made on the original skulls preserved in American collections. At Providence, Rhode Island, where, from the zeal manifested by the Historical Society of that State, I had hoped to obtain access to valuable materials in this and other departments of American ethnography and archaeology, I was informed that a considerable collection of aboriginal crania, formerly preserved there, had been sent to Paris. There they will doubtless be appreciated as links in a comprehensive craniological series; but it is difficult to conceive of their possessing so great a value as on the locality where they constituted interesting memorials of an extinct nation and a nearly obliterated history. In the following Table, the measurements of the skulls of

Natick Indians of Nantucket are given from Dr. Morton's Tables, but no record is preserved of the sex. From their smaller proportions it is probable that several of them may be female skulls, and thereby reduce the general results below the fair average of the Natick cranium. The mean proportions of the ten skulls are added separately to the Table, along with the total mean.

TABLE XIII.—NEW ENGLAND CRANIA.

	LOCALITY.	L. B.	P. B.	F. B.	V. B.	L. A.	L. L.	O. F. A.	H. C.
1.	Massachusetts, . .	7.0	5.55	4.0	5.3	15.1	3.8	...	20.4
2.	Salem, Mass., . .	6.9	5.0	4.2	5.3	14.3	3.9	14.4	19.8
3.	"	7.4	5.5	4.4	5.9	15.0	4.3	14.0	18.7
4.	Milton, Mass., . .	7.1	5.4	3.7	5.2	13.3	4.4	...	19.3
5.	Nahant,	7.1	5.8	3.9	5.5	14.7	4.0	...	20.3
6.	Nantucket, . . .	6.7	5.2	4.1	5.7	14.5	4.1	14.3	19.0
7.	"	6.9	5.4	4.3	5.3	14.3	4.1	13.9	19.9
8.	"	6.9	5.1	4.1	5.1	13.1	4.1	14.0	19.2
9.	"	6.7	5.2	4.3	5.3	14.2	3.9	14.1	19.1
10.	"	7.0	5.1	4.1	5.2	13.3	4.1	13.9	19.5
11.	"	6.7	5.3	4.5	5.3	14.0	4.0	14.4	19.5
12.	"	7.4	5.7	4.4	5.7	15.0	5.0	15.0	21.5
13.	"	6.9	5.2	4.2	5.5	13.3	4.1	13.7	19.5
14.	"	7.0	5.1	4.3	5.1	13.5	4.1	14.2	19.0
15.	"	6.9	5.1	4.0	5.2	13.9	4.1	14.1	20.2
16.	East Haven, Con., .	7.0	5.7	4.7	5.3	15.1	4.1	14.1	20.2
17.	Maine,	6.8	5.1	4.2	5.6	14.5	4.0	14.4	19.0
18.	Cumberland, R. I., .	7.4	6.1	4.9	4.8	14.3	4.2	...	21.3
19.	"	7.5	5.6	3.7	5.9	15.3	4.2	...	20.7
20.	"	7.2	5.3	4.6	5.2	14.5	4.1	...	19.7
21.	Tiverton, R.I., . M.	6.8	5.7	4.0	5.5	15.0	4.2	14.4	19.8
22.	Rhode Island, . F.	7.3	5.2	4.0	5.2	14.5	4.0	14.7	20.4
23.	" M.	7.4	5.2	4.1	5.1	13.5	4.3	14.4	20.2
24.	" F.	7.4	5.5	4.1	5.7	14.8	4.2	15.2	20.7
25.	" F.	6.8	5.4	4.0	5.4	14.4	4.0	14.1	19.2
26.	" F.	7.0	5.2	3.8	5.3	14.0	3.8	14.2	19.6
27.	" M.	6.9	5.3	3.9	5.7	14.3	4.0	14.3	19.7
28.	" M.	7.0	5.5	4.1	5.6	15.5	4.1	14.4	20.1
29.	" M.	7.1	5.6	4.1	5.6	15.1	4.0	14.5	20.5
30.	" F.	7.4	4.9	3.8	5.2	13.3	3.9	14.7	20.1
	Natick mean, . .	6.91	5.24	4.23	5.34	13.91	4.16	14.16	19.64
	Total mean, . .	7.05	5.36	4.15	5.39	14.32	4.10	14.31	19.97

The New England tribes are described as having all presented a very uniform correspondence in their predomi-

nant characteristics. Dwight, in his *Travels in New England*, says of them, "They were tall, straight, of a red complexion, with black eyes, and of a vacant look when unimpassioned;" but he ascribes to them a good natural understanding, and considerable sagacity and wit. They are not, even now, entirely extinct, but, like others of the Eastern tribes that have been long in contact with the whites, it is difficult to find a pure-breed Indian among the remnants that still linger on some of their ancient sites. Judging, however, from the examples I have seen, it is probable that the red complexion which Dwight assigns to the New England tribes, may have more accurately justified the application of the term Red Indian to the aborigines first seen by European voyagers along the northern shores of the American continent, than is now apparent when observing the olive-complexioned Chippewas, Crees, and other tribes of the west. Gallatin has grouped the New England Indians along with the Delawares, the Powhattans, the Pamlicoës, and other tribes of the Atlantic sea-board, extending as far south as North Carolina, under the comprehensive title of Algonquin-Lenapé. There is no doubt that important philological relations serve to indicate affinities running through the whole, and to connect them with the great Algonquin stock, while the essentially diverse Iroquois and Huron nations were interposed between them.

Under the double title of Algonquin-Lenapé have been included all the Indian nations originally occupying the vast tract of the North American continent, extending from beyond the Gulf of the St. Lawrence to the area of the Florida tribes, and claiming the whole territory between the Mississippi and the sea; excepting where the Hurons and the aggressive Iroquois held the country around the lower lakes, and the Five Nations were already extending their hunting-grounds at the cost of Algonquin and Lenapé tribes. But however valuable comprehensive groupings

may prove to the philologist, the physical characteristics of the tribes are best studied in smaller groups; and by the same means the prevalence of dialects of a common language may be traced among tribes widely scattered, and frequently marked by important diversities of physical character. For this reason the New England Indians have been grouped apart in Table XIII.; while another Table (XIV.) is added, chiefly derived from observations recorded by Dr. Morton, and including examples of tribes embraced by the comprehensive classification of Algonquin-Lenapés, but omitting those of Canada and New England, which have already been given in previous Tables. Such a grouping of allied tribes is not without its value, as a means for comparing general results; though the essentially distinctive features of a

TABLE XIV.—ALGONQUIN-LENAPE CRANIA.

	TRIBE.	L. B.	P. B.	F. B.	V. B.	L. A.	L. I.	O. F. A.	H. C.
1.	Sauk, M.	7.4	5.9	4.6	5.5	15.3	4.3	15.0	21.0
2.	Fox, M.	7.0	5.9	4.7	5.5	15.3	4.7	14.2	20.0
3.	" M.	6.9	5.9	4.7	5.5	15.0	4.2	14.2	20.2
4.	Potowatonic, . . M.	7.8	5.7	4.4	5.3	16.0	4.6	15.8	22.1
5.	Chippewa, . . . M.	7.3	5.8	4.8	5.5	15.1	4.6	14.2	20.0
6.	" M.	7.2	5.5	4.3	5.5	14.8	4.1	14.6	20.2
7.	Delaware, . . . F.	7.0	5.5	4.6	5.1	14.4	4.2	14.5	20.0
8.	" M.	7.8	5.4	4.4	6.2	15.6	4.3	16.0	21.5
9.	Minsi, M.	6.7	5.0	4.2	5.3	14.0	4.1	13.8	19.3
10.	Manta, M.	7.0	5.1	3.9	5.3	14.6	3.9	14.0	19.5
11.	Miami, M.	6.9	5.5	4.3	5.5	14.5	4.1	14.0	19.8
12.	" M.	7.3	5.5	4.3	5.5	14.6	4.6	14.9	20.1
13.	" M.	7.0	5.1	4.2	5.6	14.5	4.2	14.1	19.5
14.	" M.	7.6	5.3	4.3	5.5	14.0	4.1	15.5	20.5
15.	Menominee, . . . F.	6.7	5.6	4.2	5.1	14.3	4.4	13.5	19.5
16.	" F.	6.8	5.4	4.3	5.5	15.0	3.2	14.0	19.7
17.	" M.	7.3	5.7	4.5	5.3	14.2	4.5	14.2	21.0
18.	" M.	6.8	5.6	4.2	5.5	14.7	4.1	14.1	19.9
19.	" M.	7.1	5.8	4.5	5.4	14.9	4.6	14.1	20.6
20.	" F.	6.9	5.7	4.5	5.3	15.3	4.5	14.0	20.4
21.	" M.	7.1	5.6	4.4	5.4	14.8	4.3	15.0	20.5
22.	" M.	6.6	5.4	4.2	4.9	14.2	3.9	13.6	19.3
23.	" M.	7.5	5.4	4.0	5.5	14.5	4.2	...	20.6
Menominee mean,		6.98	5.58	4.31	5.32	14.54	4.19	14.06	20.17
Total mean,		7.12	5.53	4.37	5.42	14.77	4.22	14.42	20.30

single tribe or nation are more to be relied on. I have accordingly given the mean results of the Menominee crania, nine in number, in addition to those of the whole. The Menominees originally occupied the country round Green Bay, on Lake Michigan, where they early attracted the attention of the Jesuit missionaries. The unusual fairness of their complexion has been repeatedly commented on by travellers; and it presented so remarkable a contrast to the colour of other Indian tribes in their vicinity, that Keating, after noting in his *Expedition to the St. Peter's River*, the resemblance of the Menominee Indians he met with to the white mulattoes of the United States, adds: "They are naturally so much fairer than the neighbouring tribes, that they are sometimes called the White Indians." How far this is a purely aboriginal trait, may be subject to doubt. Great variety unquestionably exists in the shades of colour of the American Indian tribes; but besides this, the presence of the white man among them began very early to affect the race, and changes have been wrought by such intercourse on tribes, beyond the most remote clearings of western settlement. But this subject is treated of more in detail in a subsequent chapter. No traces of physical degeneracy are noted by the latest observers of the Menominees. Though reduced to a small remnant, they still maintain their ancient character for bravery and foresight; and appear to have possessed characteristics peculiarly fitting them for acquiring the elements of civilisation, had they been subjected to its influences under favourable circumstances. "Their language," Gallatin remarks, "though of the Algonquin stock, is less similar to that of the Chippewas, their immediate neighbours, than almost any dialect of the same stock." Excepting in the remarkable excess of the parietal diameter, the Menominee mean falls below the total mean; but this may be partly accounted for by the proportion of small female skulls to the whole.

Thus far the various ethnical groups referred to are all

embraced within the true American stock to which Dr. Morton, and other distinguished ethnologists of the New World, have assigned a nearly absolute uniformity of cranial type, or such an approximation to it as serves in their estimation to indicate with equal clearness the separation of the American race by radical diversity of ethnical characteristics from all races of the Old World. But all concur in excepting from this otherwise undeviating comprehensiveness of ethnical uniformity, the tribes occupying the hyperborean regions. Dr. Morton has appended to his *Crania Americana* drawings and measurements of four Esquimaux skulls, in order to illustrate "the great and uniform differences between these heads and those of the American Indians," and to confirm the opinion advanced by him, "that the Esquimaux are the only people possessing Asiatic characteristics on the American continent." The evidence resulting from varied opportunities of observation, and the opinions arrived at by the most experienced practical ethnologists, appear to me to point to a very different conclusion. The Mongolian classification of the American Indian is borne out by many significant points of resemblance in form, colour, texture of hair, and peculiar customs and traits of character, wanting in the Esquimaux. The striking resemblance noted by Humboldt, as existing between the American race and the Asiatic Mongols, has already been referred to; and the same idea receives independent confirmation on the high authority of Dr. Charles Pickering, as the result of his extensive observations on the races of both continents. But on the assumption of an Asiatic affinity for the American Mongol, the peopling of the northern and southern continents was in process from so remote an epoch, at diverse points, and with such obvious indications of an intermingling of races, that the American may still be regarded as a special type. The effects of novel, and very dissimilar physical influences have also contributed to such ethnical results; while the prolonged isolation of this

whole race from all intercourse from without is proved by an apparent philological unity on the American continent, within which its hyperborean race is acknowledged to be embraced even by those who most rigidly enforce its exclusion on physiological grounds. In some respects the cranial and other physical peculiarities of the Esquimaux undoubtedly distinguish them from other American races ; but to those an exaggerated value has been assigned, in part, perhaps, owing to the great diversity of habits and manners incident to Arctic life. But the analogies which these suggest have given a novel significance to the physical characteristics of the Esquimaux, by the assumption—as it seems to me, on wholly inadequate grounds,—that the palæotechnic cave-men of Europe have not only their living representatives, but their actual lineal descendants, in this American race. If so, neither the Cro-Magnon, the Mentone, nor any of the cave disclosures hitherto recorded, illustrate the physique of the primitive hunting and fishing race of Europe's post-glacial age.

An extreme pyramidal character of cranium consequent on the angular junction of the parietal bones, and the prolongation of this wedge-like form into the frontal bone, occurs more frequently, and with a greater prominence, in the Esquimaux than in any other American race ; and still more, the prognathous form of the superior maxilla, and the very small development of the nasal bones, contrast with well-known characteristics of the Red Indian. But notwithstanding those distinctive points, an impartial observer might be quite as likely to classify some of the examples of Iroquois and other northern tribes figured in the *Crania Americana*, with the Esquimaux, as to trace in them any approximation to a Peruvian, Mexican, or Mound-Builder type.

In all arguments based on the assumed predominance of one uniform cranial type throughout the whole Western Hemisphere, the Arctic American, or Esquimaux, has been

excluded ; and he has been regarded either as the exceptional example of an Asiatic intruder on the American continent, or as the hyperborean autochthone of the Arctic realm, as essentially indigenous there as the reindeer or the polar bear. An examination of numerous Arctic crania, and a comparison of them with those of the North American Indians in the Morton, Smithsonian, and other collections, have only tended to confirm my doubts as to the existence of any such uniform or strongly marked line of difference as Dr. Morton was led to assume from the small number of examples of the former which came under his observation.

Favourable opportunities for the study of Esquimaux crania have sufficed to furnish me with some satisfactory data for forming an opinion on the typical elements of the Arctic skull form. In Table xv. the measurements of thirty-nine well-authenticated Arctic crania afford some adequate means for instituting comparisons with those of the Indian. But subsequent to the publication of the first edition, I enjoyed the advantage of examining at Philadelphia, in company with Dr. J. Aitken Meigs, a remarkable series of one hundred and twenty-five Esquimaux crania, obtained by Dr. Hayes during his Arctic explorations in 1860 ; and more recently I have compared and carefully measured the Tschuktschi crania in the collection of the Smithsonian Institution. The latter skulls, six in number (Table xvi.), were exhumed from the burial-place of a village called Terguyune, on the island of Arikamecheche, at Glassnappe harbour, west of Behring Strait, lat. $64^{\circ} 40'$ N., long. $172^{\circ} 59'$ W. of Greenwich, and furnish interesting materials for comparison between the American and Asiatic representatives of the common Arctic race. Without being identical, the correspondence in form between the two groups of crania is such as other affinities in language, arts, and general physical character would suggest. The Tschuktschi skulls here referred to, are, however, too few in number for the determination of a specific

TABLE XV.—ESQUIMAUX CRANIA.

	LOCALITY.	L. D.	P. D.	P. D.	T. D.	L. M. A. ¹	L. A.	L. L.	A. F. A.	H. C.
1.	Baffin's Bay, . . .	7.2	5.1	4.2	5.3	...	13.8	4.3	14.3	20.2
2.	Discoe Island, . . .	7.4	5.1	4.3	5.7	...	15.1	3.7	15.7	20.5
3.	"In the Snow," Captain Parry, . . .	7.2	5.4	4.4	5.3	...	14.4	4.3	14.5	20.6
4.	Sabine Island, . . .	7.5	5.2	4.3	5.6	...	14.7	4.2	15.5	21.1
5.	Hopedale, Labrador, . . .	8.0	5.4	4.6	5.7	...	15.2	4.3	16.1	22.2
6.	Icy Cape, Behring St., . . .	6.7	5.1	4.4	5.1	...	14.4	3.8	13.1	19.1
7.	Cast, . . .	7.2	4.8	4.3	5.3	...	14.0	4.0	15.3	20.2
8.	Lat. 69° 21' 19" S., } Long. 81° 31' W., }	7.6	5.7	4.6	5.6	...	15.3	4.3	15.6	21.8
9.	Cast, . . .	7.1	4.8	4.0	5.2	...	13.7	4.2	15.2	19.5
10.	" . . .	7.4	5.3	4.5	5.6	...	15.2	4.2	16.1	20.7
11.	" . . .	7.4	5.2	4.3	5.6	...	14.6	4.1	15.4	20.7
12.	" . . .	7.3	5.3	4.3	5.5	...	14.6	4.2	14.9	20.7
13.	Hare Island, . . .	6.9	4.9	4.0	5.3	...	13.3	4.0	14.0	19.4
14.	By M. Schwartz, Stockholm . . .	7.7	5.6	4.6	5.7	...	15.1	4.3	15.4	21.7
15.	" " . . .	7.4	5.1	4.2	5.2	...	14.3	4.1	14.6	20.5
16.	" " . . .	7.4	5.4	4.5	5.4	...	14.6	4.2	15.1	21.3
17.	" " . . .	7.4	5.1	4.5	5.4	...	14.3	4.1	14.6	20.7
18.	" " . . .	7.2	5.0	4.2	5.5	...	14.4	4.0	15.5	20.0
19.	" " . . .	7.2	5.2	4.4	5.5	...	14.6	4.0	14.7	20.4
20.	Davis Straits, . . .	7.5	5.4	4.6	5.4	...	14.3	4.1	15.2	20.4
21.	" " . . .	7.3	5.4	4.4	5.3	...	14.2	4.2	14.6	20.3
22.	Greenland (167), . . .	7.1	5.5	...	5.6	...	...	...	14.8	20.0
23.	Discoe Island (168) . . .	7.0	4.2	...	5.0	...	...	...	14.9	19.8
24.	Eskimo (166), . . .	7.1	5.5	...	5.6	...	...	...	14.8	20.6
25.	Discoe Island, . . .	7.8	4.6	4.3	5.8	12.7	...	4.2	15.8	21.4
26.	" . . .	6.9	4.8	4.2	5.2	12.0	...	4.3	14.3	19.4
27.	" . . .	7.2	4.6	4.0	5.6	12.8	...	4.3	14.6	...
28.	" . . .	7.5	4.8	4.4	5.5	13.0	...	4.1	14.9	21.0
29.	" . . .	7.5	4.4	4.4	5.7	12.7	...	4.5	14.9	20.8
30.	" . . .	6.9	4.1	3.8	5.3	11.8	...	4.3	13.6	19.4
31.	" . . .	7.4	4.9	4.3	5.7	12.3	...	4.2	14.8	20.5
32.	Greenland, Dr. Kane, . . .	7.3	4.6	4.4	5.7	12.7	...	4.5	15.2	21.4
33.	" " . . .	7.2	4.5	4.3	5.5	12.3	...	4.3	14.3	20.3
34.	" " . . .	7.1	4.8	3.7	5.3	11.8	...	4.4	14.3	19.4
35.	" " . . .	7.1	4.8	4.2	5.1	12.0	...	4.0	14.0	19.8
36.	" " . . .	7.1	4.7	4.0	5.3	12.3	...	4.3	14.2	19.6
37.	Upemariok, . . .	7.0	5.3	4.9	5.5	12.9	...	4.3	14.6	20.4
38.	" . . .	7.3	5.0	4.3	5.3	12.4	...	4.1	14.8	20.0
39.	N. Greenland, . . .	7.3	5.3	4.2	5.4	12.9	14.6	4.0	14.2	20.2
	Mean, . . .	7.28	5.04	4.31	5.45	12.44	14.48	4.18	14.60	20.41

¹ An additional column, L. M. A., the *intermentoid arch*, is added in this Table, measured from the meati, instead of the mastoid processes, owing to the defective condition of the latter in some of the crania. The measurements of 25-38 were taken for the author by Dr. J. Aitken Meigs, and in these the parietal diameter is at the parietal protuberances; in the others, it indicates the extreme parietal diameter, generally nearer the squamous suture. This reduces the apparent mean parietal diameter, which if taken from the first twenty-four crania rises to 5.22.

typical form ; and the fact that they are all derived from one cemetery adds to the chances of exceptional family peculiarities. But on carefully examining the Hayes collection, with the Tschuktchi skull-form in view, I was not only struck with the predominance of the same features in both, though less strongly marked in the latter ; but also with the fact that from the large number of Esquimaux crania before me, it was quite possible to select an equal number closely corresponding to the Asiatic hyperborean type. In both, the head is long, high, and pyramidal, with retreating forehead, and great malar breadth ; and in all of them there is some tendency toward the wedge-formed vertex : which, in the most strongly marked Esquimaux crania presents the junction of the parietal bones in a keel-like ridge, extending into the depressed and narrow frontal bone. The most strikingly characteristic Tschuktchi head, is that marked No. 3, in Table xvi. ; whilst No. 4 approaches the brachycephalic proportions of the true Mongol type. Dr. Meigs describes the Esquimaux skull as " large, long, narrow, pyramidal ; greatest breadth near the base ; sagittal suture prominent and keel-like, in consequence of the angular junction of the parietal and two halves of the frontal bones ; proportion between length of head and height of face as seven to five ; . . . forehead flat and receding ; occiput full and salient ; face broad and lozenge-shaped, the greatest breadth being just below the orbits ; malar bones broad, high, and prominent ; zygomatic arches massive and widely separated ; nasal bones flat, narrow, and united at an obtuse angle, sometimes lying in the same plane as the naso-maxillary processes."¹ The remarks of Dr. J. Barnard Davis on the last-named peculiarities are worthy of note. In the Esquimaux of the eastern shores of Baffin's Bay, he observes, the nasal bones are scarcely broader, though frequently longer than in some Chinese skulls, where they are so narrow as to be reduced to short linear bones. " In those

¹ *Catalogue of Human Cranio*, A.N.S., 1857, p. 50.

of the opposite, or American shores of Baffin's Bay, they are very different, presenting a length, breadth, and angle of position, almost equal to those of European races having aquiline noses.*¹ This slight, yet striking anatomical difference seems to supply a link of considerable value, as indicative of a trait of physiognomical character in the more southern Esquimaux, tending, if confirmed by further observation, like other physical characteristics already noticed, to modify the abrupt transition assumed heretofore as clearly defining the line of separation between the contrasting Arctic and Red Indian races of the New World.

TABLE XVI.—TSCHUKTCHI CRANIA.

			L. D.	F. S.	P. D.	V. D.	I. N. A.	F. A.	I. L.	G. F. A.	M. C.
1.	Arikamotechee, .	M.	7.2	5.4	3.8	5.5	12.5	14.6	3.9	14.6	19.9
2.	"	M.	7.25	5.6	4.6	5.4	12.5	14.6	4.2	14.3	28.4
3.	"	M.	7.0	5.4	4.0	5.5	13.0	15.8	4.2	14.4	19.7
4.	"	M.	6.7	5.5	4.2	5.8	12.7	14.4	4.1	13.7	19.3
5.	"	F.	6.7	5.0	3.7	5.2	12.1	13.9	3.8	13.8	19.0
6.	"	F.	6.8	5.2	3.8	5.1	13.2	14.2	3.9	14.3	19.1
Mean, .			6.93	5.35	4.02	5.42	12.67	14.58	4.03	14.18	19.57

From the relative measurements of the Esquimaux and Tschuktchi crania, the great length and narrowness of the skull are apparent, though in estimating the value of the parietal diameter in instituting comparisons with the other Tables, it must be borne in remembrance that this diameter in fourteen of the Esquimaux examples (21-34) is measured from the parietal protuberances, which are not necessarily the points of greatest width. In the Esquimaux, as in the Huron, and generally in the Indian skull, the greatest diameter appears to be towards the squamous suture. The elevation of the vertex is also in no degree remarkably divergent from the proportions of northern Indian crania though the pyramidal apex suggests to the eye a greater

¹ *Crania Britannica*, p. 30.

vertical diameter. Along with the other points of correspondence, this tends to confirm the idea that any approximation to uniformity in the form of head, or other physical characteristics, traceable throughout the American continent, is no more than might fairly be looked for among nations placed to so great an extent under the operation of similar conditions of social life, and affected by so many corresponding extraneous influences.

Dr. Latham, after commenting on the distinctions which separate the Esquimaux of the Atlantic from the tribes of American aborigines lying to the south and west of them, as elements of contrast which have not failed to receive full justice, adds: "It is not so with the Eskimos of Russian America, and the parts that look upon the Pacific. These are so far from being separated by any broad and trenchant line of demarcation from the proper Indians or the so-called Red Race, that they pass gradually into it; and that in respect to their habits, manner, and appearance, equally. So far is this the case that he would be a bold man who should venture, in speaking of the southern tribes of Russian America, to say: *Here the Eskimo area ends, and here a different area begins.*"¹ The difference thus pointed out may be accounted for, to a considerable extent, by the diverse geographical conformation of the continent, on its eastern and western sides, which admits in the latter of such frequent and intimate intercourse as is not unlikely to lead to an intermixture of blood, and consequent blending of the races, however primarily distinct and diverse. But the evidence now produced refers to tribes having no such intercourse with the Esquimaux, and distinguished from them by important characteristics, in manners, social habits, and external physiognomy. Nevertheless, if the conclusions submitted here, deduced from an examination of several hundred Indian crania, are borne out by the premises, this much at least may be affirmed: that a marked

¹ *Varieties of Man*, p. 291.

difference distinguishes the Northern tribes, now or formerly occupying the country around the great lakes, and ranging through the ancient hunting-grounds between the Mississippi and the Atlantic seaboard, from some of those to the westward of the Rocky Mountains, as well as in the southern valley of the Mississippi; while notwithstanding the prognathous maxillary development of the Esquimaux: intermediate forms supply nearly all the links of a graduated approximation, from the extreme brachycephalic skull with vertical occiput to that of the dolichocephalic Esquimaux, with protuberant occiput, inclining in its upper part obliquely towards the vertex. This is best illustrated, in so far as cranial measurements are available for the purpose of comparison, by the following Table (xvii.), where the eye will catch at a glance the distinctive elements of approximation or contrast which pertain to the different groups:

TABLE XVII.—COMPARATIVE MEAN CRANIAL MEASUREMENTS.

		L. B.	P. B.	P. H.	T. B.	L. A.	L. L.	G. F. A.	H. C.
1.	Mound Crania, . . .	6.57	5.90	4.20	5.55	15.60	4.40	14.00	19.93
2.	Cave Crania, . . .	6.62	5.78	4.51	5.47	14.85	4.42	13.57	19.77
3.	Peruvian B. C., . . .	5.97	5.12	3.73	4.93	14.76	4.12	12.92	18.76
4.	Peruvian D. C., . . .	6.49	4.95	3.57	4.94	14.45	4.10	14.46	19.72
5.	Mexican B. C., . . .	6.56	5.51	4.30	5.55	14.69	4.25	13.95	19.66
6.	Mexican D. C., . . .	7.05	5.41	4.31	5.35	15.20	4.12	14.17	19.29
7.	American B. C., . . .	6.62	5.45	4.24	5.30	14.63	4.25	13.85	19.44
8.	American D. C., . . .	7.24	5.47	4.36	5.42	14.67	4.23	14.62	20.29
9.	New England, . . .	7.05	5.36	4.15	5.39	14.32	4.10	14.31	19.77
10.	Iroquois, . . .	7.29	5.42	4.27	5.40	14.53	4.23	14.49	20.34
11.	Algonquin, . . .	7.25	5.58	4.43	5.37	14.42	4.35	14.42	20.44
12.	Algonquin-Lenapé, . . .	7.12	5.53	4.37	5.42	14.77	4.22	14.42	20.30
13.	Tschuktschi, . . .	6.93	5.35	4.02	5.42	12.67	4.02	14.18	19.57
14.	Esquimaux, . . .	7.28	5.22	4.31	5.45	12.44	4.18	14.80	20.41

No. 1 is the mean of the four undoubted Mound Crania, and No. 10 that of the combined Tables ix., x., xl., all of which pertain to the common Iroquois stock. In No. 14 the parietal diameter is the mean of the extreme parietal, as indicated in the note, Table xv.

The Peruvian crania of both classes indicate a people of inferior size and stature, and present essential differences, even in the brachycephalic class, from those of the mounds. Their small vertical diameter is specially noticeable. In

this, as well as in other respects, the greater correspondence between the Mexican brachycephalic and the Mound crania is suggestive; and is calculated to increase our desire for the acquisition of a sufficient number of examples of both, whereby to test the evidence of physical correspondence between the elder races of Anahuac and the people who have left such remarkable evidences of a partially developed civilisation in the Mississippi Valley. The three extremes, it will be seen, are the Peruvian brachycephali, the Esquimaux, and the Mound-Builders:—

	Length.	Breadth.	Height.	O. F. Arch.
Peruvian,	5.97	5.12	4.93	12.92
Esquimaux,	7.28	5.22	5.45	14.80
Mound-Builders, . .	6.57	5.90	5.55	14.00

But between those, the range of variations sufficiently illustrates the fallacy of a supposed uniform cranial type affirmed to prevail throughout the whole Western Hemisphere, from the Arctic Circle to Cape Horn.

It is thus apparent that the ideal American typical head has no other existence in nature than similar brachycephalic varieties equally prevalent in the Old World. Yet no one who has followed the progress of American anthropology and ethnical science during the past quarter of a century can question the fact that the determination of its true value was indispensable to any real progress. There seemed to be no conceivable limit to its application. In 1852, Dr. Dowler of New Orleans found a human skeleton in a cypress swamp of the modern delta of the Mississippi for which he demonstrated an antiquity of upwards of 57,000 years; and to this Dr. Usher added the corollary, little indicative of any evolutionary progress: "The type of the cranium was, as might be expected, that of the aboriginal American race."¹ Wherever the supposed fossil American man, the "*homo diluvii negator*," has turned up, —in the fossiliferous caves of Brazil; in the calcareous caverns, the auriferous drift, or under the lava beds of

¹ *Types of Mankind*, p. 353.

California; as in the most ancient sepulchral deposits;—the same tale has been told of this American typical cranium. Mr. J. W. Foster's idea of a Neanderthal type of skull in the Illinois mounds does indeed show newer influences at work; but the Mortonian doctrine is by no means exploded even now. The Hon. Judge M. F. Force, of Cincinnati, thus writes in his *Considerations on the Mound-Builders*, (1873), "The study of the physical structure has ended in the same results. The skulls of all nations south of the Esquimaux, ancient and modern—Patagonian, Peruvian, Aztec, Mound-Builders, and the Indian of the present day,—are said by Morton (and his views, though ably questioned by Dr. Wilson, of Toronto, are generally accepted) to present the same type, to constitute one family."¹

The history of this persistent ideal head-type of the American man has some features which may deserve a place among the curiosities of scientific literature. The late Professor Agassiz and Dr. J. C. Nott very frankly acknowledged that until the publication, in 1857, of my paper "On the supposed prevalence of one cranial type throughout the American aborigines," the views of Dr. Morton had been universally accepted among American men of science. Few points might indeed have seemed less open to dispute. Agassiz, dating a communication to the authors of *Indigenous Races of the Earth*, Feb. 1st, 1857, illustrated his ideas as to the genus *Cebus* by an appeal to Morton's views, as to an unchallenged dogma of science.² Dr. J. Aitken Meigs in that same month and year completed his catalogue of the Morton collection, the postscript to the introduction of which bears the date of Feb. 1857; and there, after a careful review of the whole evidence, Dr. Morton's opinion is reasserted in the most unqualified terms. It was in the following August that I challenged this dogma,

¹ *Prehistoric Man*, etc., by M. F. Force, p. 69.

² *Indigenous Races*, p. 14. "In the same way as Morton has shown that all the Indians constitute but one race from one end of the continent to the other."

and submitted the above-named communication to the American Association for the Advancement of Science.¹ Nine years thereafter, in 1866, Dr. J. Aitken Meigs produced before the Academy of Natural Science of Philadelphia his "Observations upon the Cranial forms of the American Aborigines,"² embodying therein his discovery that the views set forth by me had been familiar to the scientific world long before.

To whomsoever the credit may be due for removing this stumbling-block out of the way of the scientific inquirer, it is no longer open to doubt that the ideal American type is but one of a wide variety of forms characteristic of diverse American races. If a line of separation between the Peruvian, or so-called Toltecan head, and other American forms is to be drawn, it cannot be introduced as heretofore to cut off the Esquimaux, and rank the remainder under varieties of one type; but must rather group the hyperborean American cranium in the same class with others derived from widely separated regions extending into the Tropics and beyond the Equator. In reality, however, the results of such attempts at a comparative analysis of the cranial characteristics of the American races go far beyond this. They show that the form of the human skull is just as little constant among different tribes or races of the New World as of the Old; and that, so far from any simple subdivision into two or three groups sufficing for American craniology, there are abundant traces of a tendency of development into the extremes of brachycephalic and dolichocephalic forms, and of many intermediate varieties.

The legitimate deduction from such a recognition, alike of extreme diversities of cranial form, and of many intermediate gradations, is, not that cranial formation has no ethnical value; but that the truths embodied in such physiological data are as little to be eliminated by ignoring or

¹ *Canad. Jour.* Nov. 1857. *Blin. Philosoph. Jour.* Jan. 1858.

² *Proceed. Acad. Nat. Sc. Philad.* vol. xviii. p. 203.

slighting all diversities from any predominant form, and assigning it as the sole normal type: as by neglecting the many intermediate gradations, and dwelling exclusively on examples of extreme divergence from prevailing types. Humboldt has been quoted as favouring the idea of American ethnic unity; but those who dwell most upon it, omit to notice that it is a unity which he believed them to hold in common with the Mongol nations of Asia. It must be borne in remembrance, moreover, that his own observations were limited to tropical America. It is therefore no presumption to assume that personal observation in reference to the northern tribes would have modified his opinion, that "the nations of America, except those which border on the polar circle, form a single race, characterised by the formation of the skull, the colour of the skin, the extreme thinness of the beard, and straight glossy hair." Extended observation tends to disclose variations in the colour of the skin scarcely less distinctive than those already noted in the form of the head: from the fair Menominees, and olive-complexioned Chippewas, to the dark Pawnees, and the Kaws of Kansas almost as black as negroes. The name of *Red Indian* I conceived had been applied to the cinnamon-coloured natives of the New World, in consequence of their free application of red pigments, such as are in constant use among the Indians on Lake Superior: until I fell in with an encampment of Micmacs, in their birch-bark wigwams, on the Lower St. Lawrence, and saw for the first time a complexion to which the name of red or reddish-brown may very fitly apply. Again, as to the hair, the evidence of the ancient Peruvian graves furnishes proof of hair differing essentially both in colour and texture from that of the modern Indian; and Mexican terra-cottas and the sculptures of Central America indicate that the beard was by no means universally absent.

But it is not necessary thus to discuss in detail a detached remark of Humboldt, in order to prevent its misapplication

in proof of deductions it has thus been produced to support ; for he has himself furnished the most conclusive evidence of the totally different inferences he drew from those recognised characteristics of the American race. Dr. Nott, when commenting on the Esquimaux skulls engraved in the *Crania Americana*, remarks: "Nothing can be more obvious than the contrast between these Esquimaux heads and those of all other tribes of this continent. They are the only people in America who present the characteristics of an Asiatic race ; and being bounded closely on the south by genuine aborigines, they seem placed here as if to give a practical illustration of the irrefragable distinctness of races."¹ But such ethnical contrasts are by no means so rare. Mr. Hale, after enjoying all the advantages for extended observation and comparison which his position as philologist of the United States Exploring Expedition furnished, remarks on the contrast between the native population on the upper and lower waters of the Columbia River: "No two nations of Europe differ more widely in looks and character than do these neighbouring subdivisions of the American race."² Dr. Pickering, as we have seen, after the same experience, while giving abundant proof that no prejudice against the theory of an "irrefragable distinction of races" influenced his opinions, nevertheless arrived at conclusions so diametrically opposed to those of Dr. Nott, that he affirms the Asiatic and American nations of the Mongolian type to be one race. Humboldt, who enjoyed preëminent opportunities of studying the Mongolian characteristics on the Asiatic continent, in full confirmation of the same idea, remarks, in his introduction to his *American Researches*: "The American race bears a very striking resemblance to that of the Mongol nations, which include the descendants of the Hiong-Nie, known heretofore by the name of Huns, the Kalkas, the Kalmuks, and the Burats. It has been

¹ *Comparative Anatomy of Races, Types of Mankind*, p. 447.

² *Ethnography and Ethnology of U. S. Exploring Expedition*, p. 109.

ascertained by late observations, that not only the inhabitants of Unalashka, but several tribes of South America, indicate by the osteological characters of the head, a passage from the American to the Mongol race. When we shall have more completely studied the brown men of Africa, and that swarm of nations who inhabit the interior and north-east of Asia, and who are vaguely described by systematic travellers under the name of Tartars and Tschoudes: the Caucasian, Mongol, American, Malay, and Negro races, will appear less insulated; and we shall acknowledge in this great family of the human race one single organic type, modified by circumstances which perhaps will ever remain unknown." It is indeed an important and highly suggestive fact, in the present stage of ethnological research, that authorities the most diverse in their general views, can nevertheless be quoted in confirmation of opinions which trace to one ethnic centre, the Fin and Esquimaux, the Chinese, the European Turk and Magyar, and the American Indian.

CHAPTER XXI.

ARTIFICIAL CRANIAL DISTORTION.

PREVALENT MODE OF SEPULTURE—WIDELY DIFFUSED SEPULCHRAL RITES—CHITTEWA GRAVES—INDIAN OMBELIES—CHINOOK FUNERAL—THE CHIEF CASENOV—SACRIFICE TO THE DEAD—MODERN MODES OF SEPULTURE—THE ANCIENT MACROCEPHALI—ASIATIC FLATHEADS—KENYON CRANIA—MACROCEPHALI OF THE CRIMEA—SUPPOSED PERUVIAN CRANIA—HUN AND AVAR SKULLS—THE HUNS OF ATILLA—THE AYARH—DAVE SKULL FROM JERUSALEM—FRENCH SKULL-COMPRESSION—THE HOCHELAGA SKULL—POSTHUMOUS DISTORTION—POSTHUMOUS MALFORMATION—COMMON ABNORMAL FORMS—UNDESIGNED MODIFICATIONS—THE EUROPEAN CRADLE-BOARD—PACIFIC ISLANDS FLATHEADS—KANAKA CUSTOM—THE EXTREME FORMS—INFLUENCE OF SYNOSTOSIS—OSSIFICATION OF SUTURES—KENWATE HEAD-FORM—EFFECTS OF DEFORMATION—INTELLECTUAL INFLUENCES—PERUVIAN CUSTOM—ANTICIPATED TRACES.

THE assumed evidences of a physical unity pervading the nations of the American continent disappear upon careful scrutiny; and the like results follow when the same critical investigation is applied to other proofs adduced in support of this attractive but insubstantial theory. Dr. Morton, after completing his elaborate illustrations of American craniology, introduces an engraving of a mummy of a Muysca Indian of New Granada, and adds: "As an additional evidence of the unity of race and species in the American nations, I shall now adduce the singular fact, that from Patagonia to Canada, and from ocean to ocean, and equally in the civilised and uncivilised tribes, a peculiar mode of placing the body in sepulture has been practised from immemorial time. This peculiarity consists in the sitting posture."¹ He accordingly proceeds to marshal evidence in proof of the practice of such a mode of interment among many separate and independent tribes; nor is

¹ *Crania Americana*, p. 244.

it difficult to do so, for it was a usage of greatly more extended recognition than his theory of "unity of race and species" implies. It was a prevailing, though by no means universal mode of sepulture among tribes of the New World; and its practice by many ancient nations is indicated by allusions of Herodotus, and proved by sepulchral disclosures pertaining to still older eras. British cromlechs and cists show that the custom was followed by prehistoric races nearly to the close of the pagan era. The ancient barrows of Scandinavia reveal the like fact; and abundant evidence proves the existence of such sepulchral rites in every quarter of the globe: so that if the prevalence of a peculiar mode of interment of the dead may be adduced as evidence of unity of race and species, it can only operate by reuniting the lost links which restore to the red man a share in the genealogy of a common race.

But ancient and modern discoveries alike prove considerable diversity in the sepulchral rites of nations. The skeleton has been found in a sitting posture in British cromlechs, barrows, and cists, pertaining to periods long prior to the era of Roman invasion, and in others subsequent to that of Saxon immigration. But we have also evidence of cremation and urn-burial; of the recumbent skeleton under the cairn and barrow, in the stone cist, and in the rude sarcophagus hewn out of a solid trunk of the oak; and in this, as in so many other respects, the British microcosm is but an epitome of the great world. Norway, Denmark, Germany, and France all supply the same evidences of varying rites; and ancient and modern customs of Asia and Africa confirm the universality of the same. In the Tonga and other islands of the Pacific, as well as in the newer world of Australia, the custom of burying the dead in a sitting posture has been repeatedly noted; for it has this advantage, if none other, that it takes up the least room, and with the imperfect tools of the savage, involves the smallest amount of excavation. But it is not universal

even there; nor was it so in America, though affirmed by Dr. Morton to be traceable throughout the northern and southern continents, and by its universality, to afford "collateral evidence of the affiliation of all the American nations." So far is this from being the case, that nearly every ancient and modern sepulchral rite has had its counterpart in the New World. Mummification, cremation, urn-burial, and inhumation, were all in use among different tribes and nations of South America, and have left their



FIG. 128.—Chippewa Grave, Saskatchewan River.

traces no less unmistakably on the northern continent. Figure 128 illustrates a common form of bier, sketched from a Chippewa grave on the Saskatchewan. The body is deposited on the surface, protected by wood or stones, and covered over with birch-bark. In the neighbourhood of the clearings, as at Red River, the grave is generally surrounded by a high fence. Among the Algonquins, the Hurons, the Mandans, the Sioux, and other tribes, the body was laid out at full length on an elevated bier or

scaffold, and left to decay ; then after a time the bones of the dead, with all the offerings deposited beside them, were consigned to one common grave.

The ossuaries of the Hurons have already been referred to, and their contents described. Similar sepulchral depositories of great extent, forming the general receptacle of large communities, have been repeatedly brought to light both in Canada and the Northern States. Creuxius quotes from Le Jeune an account of one of the general burials of the Hurons which he witnessed. A grand celebration, or "Feast of the Dead," was solemnly convoked. Not only the remains of those whose bodies had been scaffolded, but of all who had died on a journey or on the war-path, and been temporarily buried, were now gathered together and interred in one common sepulchre with special marks of regard. The pit was lined with furs ; all the relics and offerings to the dead were deposited beside the bones ; and the whole were covered with furs before the earth was thrown over them. When the Mandans buried the remains of their scaffolded dead, they left the skull uninterred ; and Catlin describes their skulls as lying on the prairies arranged in circles of a hundred or more, with their faces towards the centre, where a little mound is erected, surmounted by a male and female buffalo skull.

To the west of the Rocky Mountains, new modifications vary the Indian sepulchral rites. Along the Cowlitz and Columbia rivers, and among various north-west tribes on the Pacific, the canoe of the deceased is converted into his bier, and this is elevated on posts (Fig. 129) on certain islands set apart as the cemeteries of the different tribes. Within the canoe, and around the bier, are deposited the favourite weapons and other property of the dead, along with the offerings of his friends. Those include not only the native bow and arrows, spear, paddle, and personal ornaments, but the iron tomahawk, copper kettle, gun, and others of the most prized objects acquired from the

Hudson's Bay factors. Some of the rites and customs of those flat-head tribes furnish curious illustrations of the ideas relative to a future life in which such offerings to the dead have had their origin from the remotest times.

The Chinooks are among the most remarkable of the flat-head Indians, and carry the process of cranial distortion to the greatest excess. They are in some respects a superior race, making slaves of other tribes, and evincing considerable skill in such arts as are required in their wild forest and coast life. Their chief war-implements are bows and arrows, the former made from the yew-tree, and the latter feathered and pointed with bone. Their canoes are hollowed out of the trunk of the cedar-tree, which attains to a great size in that region, and are frequently ornamented with much taste and skill. In such a canoe the dead Chinook chief is deposited, surrounded with all the requisites for war, or the favourite occupations of life: presenting a correspondence in his sepulchral rites to the ancient pagan viking, who, as appears alike from the contents of the Scandinavian *Skibssætninger*, and from the narratives of the Sagas, was interred, or consumed in his war-galley, and the form of that favourite scene of ocean triumphs perpetuated in the earth-work that covered his ashes. Tin cups, copper kettles, plates, pieces of cotton, red cloth, and furs, and in fact everything which the Chinooks themselves most value, or which are most difficult to obtain, are hung round the canoe. Beside the body they place paddles, weapons, food, and whatever else is considered necessary for a long journey. Beads, ioqua shells, and small coins are even placed in the mouth of the dead. The funeral cortége of mourners in their canoes has an imposing character. The deceased, thus carefully disposed, is towed to the island-cemetery of the tribe, and there the canoe-bier is either fastened to the branches of a tree, or raised on a scaffolding of cedar boards and poles, four or five feet from the ground. The final act is to bore holes in the

canoe; and in like manner, to mutilate and render useless the various offerings to the dead. The belief is, that while their use on earth is thereby at an end, the Great Spirit will restore them to perfection on the arrival of the deceased at the elysian hunting-grounds. Among the greatest crimes which an Indian can commit is the desecration of one of those canoe-biers; and its perpetration, if discovered, is certain to be visited by death. Instances of such sacrilege are accordingly of rare occurrence; but one happened a few years since, to which attention was directed by the spoiler being shot dead within the precincts of Fort Vancouver, by order of Casenov, the chief of the Chinook Indians.



FIG. 139.—Canoe Bier, Columbia River.

The favourite son of this chief died, and, contrary to the wonted custom of his tribe, he had him buried in the cemetery attached to Fort Vancouver. The proceedings of the bereaved chief presented a singular admixture of Christian sepulture with the ineradicable superstitions of the wild Indian. The coffin was made sufficiently large to contain all the necessaries supposed to be required for his son's comfort and convenience in the world of spirits. The chaplain of the Fort read the usual service at the grave, and after the conclusion of the ceremony, Casenov returned to his lodge, and the same evening attempted the life of the boy's

mother, a daughter of the great one-eyed chief, King Comcomly, alluded to in Washington Irving's *Astoria*. The unfortunate mother had devotedly nursed her son during his sickness, and was moreover the favourite wife of the Chinook chief. But this only furnished additional motives for her destruction. Casenov stated to Mr. Kane, that as he knew his wife had been so useful to her son, and so necessary to his happiness and comfort in this world, he wished to send her with him as his companion on his long journey. The reason thus assigned for the murder of his favourite wife over the grave of their son, gives a curious insight into the motives of such barbarous sacrificial rites in all ages: exhibiting as it does so strange a mixture of good and evil.

Similar sacrifices constituted part of the last funeral rites in Europe's prehistoric times, as is proved by some of the most ancient sepulchral disclosures. The extent of the privation added to the fitness of the gift. The most prized weapons, implements, and personal ornaments; the dog, the horse, the slave, and the wife, were all lavished on the honoured dead. Nothing was spared that reverence or superstition could suggest to supply the wants of a future life. The discovery, therefore, of the stone celt or hammer, the flint knife, and the shell bracelet or necklace, unaccompanied by any implements of copper or bronze, in such laboriously constructed catacombs as that of the Knock-Maraidhe tumulus, is presumptive evidence that they are the sepulchres of a people who had not yet acquired any knowledge of metals; and the illustrations of the motives for such sacrifices which the study of modern savage life supplies, gives fresh significance to the contents of the ancient British cromlech or barrow, or those even of the post-pleiocene catacombs of Paviland or the Dordogne. We discern in them glimpses of the ideas of a future state held in the remote eras to which such sepulchral memorials belong; and discover in the ancient and modern record the same

child-like confusion of ideas, still traceable in many rustic superstitions, which betray the difficulty of conceiving of the disembodied spirit, or of a spirit-world distinct from the grave.

Singular diversities in the funeral rites and customs even of neighbouring tribes, serve still further to illustrate that individuality of thought and act by which even the rudest savage is so widely separated from all other animals. Among the Chimpseyan or Babeen Indians the female dead are scaffolded, but the male are invariably burned; and numerous evidences of the practice of cremation and urn-burial have been found in other parts of the continent. Again, the Peruvian mummy pits, the Mammoth Cave of Kentucky, and the caves at Golconda, Steubenville, and other localities, filled with bones and desiccated remains of the dead, or with their carefully preserved mummies, illustrate varying customs which have their counterpart in the practices of the Old World; while the Ohio and Scioto mounds furnish unmistakable evidence that both cremation and incumbent mound sepulture were in use by the race whose works preserve to us so many traces of ancient arts and long extinct rites.

It is thus obvious that there is little more proof of the prevalence of any single mode of sepulture among the American aborigines than can be traced in the practices of primitive nations of the Old World; while the custom of interring the dead in a sitting posture is rather suggestive of borrowed Asiatic, or primitive European rites, than of anything peculiar to the western hemisphere. The exposure of the corpse on its scaffolding, or elevated in its canoe-bier (Fig. 129), constitutes a far more characteristic peculiarity of the New World; and if it were the one prevalent rite, it might seem to justify the inference which Dr. Morton has attempted to maintain by assuming not only the universality of a different practice, but also its restriction to the American continent.

But a remarkable characteristic common to many American tribes and nations, is much more suggestive of widely diffused affinities throughout the Western Hemisphere, as well as of an aboriginal isolation, than anything else disclosed by prevalent customs or peculiar rites of sepulture. Much attention has naturally been attracted by the evidence brought to light, alike in the cemeteries of ancient Peruvian seats of civilisation, and in those of the hunter tribes of the north, of the practice of moulding the human head into artificial forms. But the strange custom proves to be no exclusive American characteristic, but one which had its counterpart among customs of the ancient world. This, therefore, is also suggestive of a borrowed usage, and of affinities with nations of the Eastern Hemisphere; unless indeed it be an ancient gift from America to Asia.

References to the singular cranial conformation of certain tribes, and to the strange practice of artificially moulding the human head, were familiar to Europe not only prior to the first voyage of Columbus, but centuries before the Christian era. The earliest notice occurs in the writings of Hippocrates, who, in his treatise *De Aëris, Aquis, et Locis*, gives an account of a people inhabiting the shores of the Euxine, whose cranial conformation bore no resemblance to that of any other nation. He further states, that they considered those most noble who had the longest heads, and ascribes this peculiar form to an artificial elongation by compression during infancy. To this people, accordingly, he gave the name of Macrocephali; and both he and subsequent writers ascribe certain peculiar mental endowments to this long-headed race. Strabo, Pliny, and Pomponius Mela all allude to the subject at later dates, though assigning different localities to the nations or tribes they refer to, and also indicating diversities of form in their peculiar cranial characteristics. This tends still further to suggest that the name of Macrocephali did not properly belong to a distinct race, or single tribe, on the shores of the Euxine

Sea; but that, like the term Flatheads, as used at the present day in reference to Indian tribes of the North-west, it was applied to all who practised the barbarous art of cranial distortion. Strabo, in the eleventh book of his Geography, describes the western portion of Asia, of which alone he appears to have had any accurate ideas; and speaks of an Asiatic tribe as having anxiously striven to give themselves a long-headed appearance, and to have foreheads projecting over their beards. Pomponius Mela also describes the Macrocephali he refers to as less hideous than other tribes in the same vicinity, among whom it may be inferred that cranial deformation was carried to a greater extent, as among the modern Chinook Indians, who depress the forehead until the skull assumes the form of that of a brute. The skulls of various ancient and modern American tribes can be discriminated by means of the peculiar form of head most in fashion with the tribe; and all the allusions of classical writers confirm the probability, that from the time of Hippocrates till long after the Christian era, the unknown regions eastward of the Euxine Sea were occupied by nations among whom the practice of artificial compression of the skull prevailed to a remarkable extent; though modified in part, probably by the differing cranial proportions natural to certain tribes around Mount Caucasus, and also by the influence of taste and fashion on this strange hereditary custom. Stephanus Byzantinus is quoted by Retzius, as speaking in his *Geographica* of macrocephalic Seythians among the inhabitants of Colchis, the modern Mingrelia, on the east coast of the Euxine Sea. The Macrocephali of Pliny were in the vicinity of Ceresus in Natolia, and those of Pomponius Mela on the Bosphorus; but from Strabo we learn of them in diverse localities both in Asia and Europe. He refers especially to one people in the region about Mount Caucasus towards the Caspian Sea, and to another in the valley of the Danube at the river Taler, both of whom modified the natural form of the head. His

notices, accordingly, greatly extend the area of this singular custom, and point to it as commonly practised among the migratory tribes of western Asia.

It thus appears that this barbarous practice is neither of modern origin nor peculiar to the New World ; and since attention has been drawn to the subject in recent years, various examples of compressed and distorted crania discovered in ancient European cemeteries amply confirm the notices of the Macrocephali in the pages of classical writers. Captain Jesse, in his *Notes of a Half-Pay Officer*, describes in his travels in Circassia and the Crimea an example of an artificially compressed cranium which he saw in the Museum at Kertch. This was said to have been found in the neighbourhood of the Don ; and he remarks in reference to it : "According to the opinions of Hippocrates, Pomponius Mela, Pliny, and others, the Macrocephali appear to have inhabited that part of the shores of the Euxine, between the Phasis and Trapezus,—the modern Trebizonde." The Russian occupation of the Crimea dates only from a late period in the eighteenth century, but since then an intelligent attention has been paid to the traces of its ancient occupants. Some of the finest works of art recovered on the sites of Hellenic colonisation have been transported to St. Petersburg, but others are preserved in the vicinity of the localities where they have been found ; and for this purpose a museum was established at the town of Kertch, in which were preserved many historical antiquities of the Crimean Bosphorus ; and especially sepulchral relics recovered from the tumuli which abound on the site of the ancient Milesian colony.

It chanced, as is now well known, that, in the fortunes of war, the town of Kertch fell into the hands of the Anglo-French invaders. Some few of its ancient treasures were preserved and transmitted to the British Museum ; but by far the greater portion were barbarously spoiled by the rude soldiery ; and among the rest doubtless perished the little-

heeded relic of the Macrocephali of the Crimea, first described by Hippocrates, in the fifth century before our era. Blumenbach has figured in his first Decade, an imperfect compressed skull, received by him from Russia, which he designates as that of an Asiatic Macrocephalus; and in 1843, Rathke communicated to Müller's *Archiv für Anatomie*, the figure of another artificially compressed skull, also very imperfect, but specially marked by the same depression of the frontal bone. This example is also described as procured from an ancient burial-place near Kertch in the Crimea; and no doubt other illustrations of the peculiar physical characteristics of the Macrocephali of the Bosphorus will reward future explorers, when the attention of those engaged in such researches, or even in ordinary agricultural labours on the site, is specially directed to the interest now attaching to them.

More recent discoveries of artificially compressed crania have chiefly occurred on European sites, though generally under circumstances which tend to justify their reference to Asiatic tribes. One of the first examples which attracted the attention of scientific observers, subsequent to the publication of Blumenbach's somewhat imperfect engraving, was a skull found, in the year 1820, at Fuersbrunn, near Grafenegg, in Austria. Count August von Breuner, the proprietor of the land, acquired possession of the interesting relic, and at once ascribed it to the Avarian Huns, who occupied that region from the middle of the sixth until the eighth century. Of this compressed Avar skull, Professor Retzius gave a description in the proceedings of the Royal Academy of Sciences of Stockholm, in 1844. In that he showed that the skull, which had been regarded as remarkable for its great elongation, was in reality a true brachycephalic skull, such as the Mongol affinities of the Avars would suggest, but that by artificial compression it had been elongated, vertically, or rather obliquely. At this stage, however, attention was diverted from the true ele-

ments of interest pertaining to the inquiry, by Dr. Tschudi communicating to Müller's *Archiv für Anatomie* a memoir, in which he instituted a careful comparison between this Grafenegg skull and the compressed crania of ancient Peruvian cemeteries, from whence he deduced the conclusion that the scientific men of Europe had been deceived in ascribing to an Avar or other Asiatic or European source, a skull which must have been originally derived from Peru. In confirmation of this, the Peruvian traveller reminds them that, widely as Austria and Peru are severed, in the sixteenth century the Emperor Charles v. embraced both within his dominions. He accordingly conceives it no improbable conjecture that the compressed skull was brought at that period, as an object of curiosity, from America; and being afterwards thrown aside, it was mistakenly assumed to pertain to native sepulture when recovered at Grafenegg in 1820.

The testimony thus undesignedly rendered to the remarkable correspondence between the artificially deformed crania of the Old and the New World, is full of interest for us, now that further discoveries have placed beyond doubt the native origin of the Grafenegg cranium. It is preserved in the Imperial Anatomical Museum at Vienna, along with another of precisely the same character subsequently dug up at Atzgerrsdorf, in the immediate vicinity of Vienna. Others have been found at the village of St. Romain, in Savoy, and in the valley of the Doubs, near Mandense; and Dr. Fitzinger asserts that a close resemblance is traceable between these and the Crimean macrocephalic crania described by Rathke and Meyer. They are further illustrated by evidence of a curious and independent character.

Dr. Fitzinger, who has published his views on this subject, in the Transactions of the Imperial Academy of Vienna, places beyond doubt the authenticity of the discoveries of macrocephalic skulls in Austria, in genuine sepulchral deposits, one of which was dug up in presence of Dr. Müller,

the resident physician of Atzgerrsdorf. He has investigated the whole subject with minute research and accurate scholarship; and after tracing ancient Macrocephali, by means of the allusions of classic writers, to the Scythian region in the vicinity of the Mœtian moor, to the Caucasus, and the farther regions extending towards the Caspian Sea, and to their various sites around the Euxine, and on the Bosphorus, he mentions an interesting independent illustration of the subject. A medal struck, apparently to commemorate the destruction of the town of Aquileia, by Attila the Hun, in the year 452, came under his notice. On one side is represented the ruined city, and on the other the bust of the Hunnish leader in profile, with the same form of head as that shown in the supposed Avar skulls. Professor Retzius subsequently confirmed this opinion from an examination of the same medal in gold, in the Royal Cabinet at Stockholm.

Attention having now been called to the subject, confirmatory illustrations multiply. M. F. Troyon, of Bel-Air, near Lausanne, who has carried on an elaborate series of explorations in the ancient cemeteries of that locality, recovered what we may style a Hun or Avar skull, precisely corresponding to those found in Austria, from a tomb of considerable depth; and he notes the discovery of several others at the village of St. Romain, in Savoy, so fragile that they fell in pieces soon after their exposure to the air. One of the same class, however, recovered in an imperfect condition, has been preserved sufficiently to exhibit the calvarium in profile, with the singular vertical elongation which appears to have constituted the ideal type of masculine beauty among the Asiatic followers of Attila, as among the Natchez, the Peruvians, and other nations of the New World. It was found by M. Hippolyte Gosse, at Villy, near Reignier, in Savoy, and has been engraved by Professor Retzius, from a drawing furnished to him by the discoverer.

The hideous aspect ascribed by ancient chroniclers to the

Hunnish invaders no doubt derived its justification, in part at least, from the strange distortions which custom thus assigned with the same imperative obligation of fashion which still perpetuates the deformity of the Mongol Chinese, in their barbarous efforts at the attainment of other prescribed proportions of an ideal female grace. Thierry, in his *Attila*, refers to the artificial means used by the Huns for giving a Mongolian physiognomy to their children. Attila's followers were a miscellaneous horde, dependent for their success on the influence of his personal character. The true wandering hordes of Scythian nomades, who constituted the Chunni, were of Ugrian race, and kindred to the Hungarians from Mount Ural; but the Huns partook more of the Kalmuk blood, while the Magyars appear to have intermingled that of the true Turk, against whose European aggressions they ultimately presented so impenetrable a bulwark. Attila, however, was in reality as much a leader of Goths as of Huns; though the black Huns from the dreary Siberian steppes constituted the aristocracy of his wild followers, whose Mongolian physiognomy formed the ideal of ethnic beauty. At this the Gothic mother accordingly aimed, by bandaging the nose, compressing the cheek bones, and giving an artificial form to the cranium of her infant. The ravages of this furious horde of invaders spread terror throughout the enervated and tottering Roman empire; and fear added fresh horrors to the wild visages of the Hunnish devastators. "Briefly and dolefully," says Palgrave, "do the chroniclers of France, Germany, and Italy describe and lament the vast fury of the Hungarian ravages. Tradition and poetry impart life and colour to these meagre narratives. The German boor still points at the haunted cairn as covering the uneasy bed or the troubled grave of the restless Huns, whose swords are heard to clash beneath the soil." The "grinning, boar-tusked, ensanguined, child-devouring ogres," are described by survivors of their desolating inroads as the most hideous race of monsters the

world ever saw ; and according to the old monk Jornandes, their horrible bestial deformity gained for them more battles than their arms. After the discomfited Huns retreated under Irnae, the youngest son of Attila, to the Volga, and conquered nearly the whole Tauric Chersonese, they were subdued in their turn by the Avars under Zaber-Chan, in the latter half of the sixth century, and thereafter they are called indiscriminately Avars or Huns by all the European chroniclers of the time of Charlemagne. Thus intermingled, they constituted once more a powerful aggressive nation, who, during the seventh and eighth centuries, kept Europe in continual dread. Their military capital was in Pannonia ; but they extended their ravages wherever the spoils of more civilised nations tempted their cupidity ; and doubtless the bones of many a fierce Avar lie mouldering in the soil that once trembled under their savage tread. Their name became a synonym for inhuman monster, under its various forms of German *Hune*, Russian *Obri*, French *Bulgar* or *Bougre*, and English *Ogre*. Such were the people whose macrocephalic, or rather obliquely depressed skulls, are believed to have been recovered in recent years, in Switzerland, Germany, and on the shores of the Euxine ; presenting strange abnormal proportions, so singularly corresponding to those of the New World, that the experienced traveller and physician, Dr. Tschudi, claimed one of the most characteristic of them as no true European discovery, but a lost relic from some ancient Peruvian tomb. Nor to Europe do they really belong, but seemingly to the nomade Mongols and Ugrians of the steppes of Northern Asia, in the vast wilds of which we lose them as they spread away eastward towards the Okhotsk Sea, the Aleutian Islands, and Behring Strait.

A curious and unexpected confirmation of the Asiatic source of the compressed crania of Europe is furnished by the discovery in 1856, by Mr. J. Judson Barclay, an American traveller, of an artificially compressed skull in an ancient

cavern at Jerusalem, which he subsequently presented to the Academy of Sciences of Philadelphia. The peculiarities are sufficiently remarkable to merit detail. Placed in the same cabinet with the American crania collected by Dr. Morton, this skull presents some of the most striking characteristics of the artificially modified crania of the New World. Seen there without any clue to the circumstances of its discovery, it would be pronounced, in all probability, a Natchez skull; shown to Dr. Tschudi, even in a European collection, it would be assigned unhesitatingly as the spoil of a Peruvian grave; but even the widely extended empire of Charles V. fails to account for the discovery of such a skull in an ancient quarry-cavern of Jerusalem. The most remarkable feature is that the occipital bone rises vertically from the posterior margin of the foramen magnum to meet the parietal bones, which bend abruptly downward between their lateral protuberances. Dr. Meigs, who made it the subject of an elaborate communication to the Academy of Natural Sciences of Philadelphia, expresses his conviction that the head has been artificially deformed by pressure applied to the occipital region during early youth; and thus recognises in it an indisputable proof of the practice in ancient Asia of the same custom of distorting the human head which was long regarded as peculiar to America. He traces in it some of the most characteristic elements of the Mongolian and the Slavonian head, while it differs in some respects from both; and finally concludes that it may be referred with greatest probability to Lake Baikal.¹ Through the Slaves and Burats of that region the short-headed races of eastern Europe graduate apparently into the Kalmuks and Mongols proper of Asia; and here probably is an example of an artificially modified cranium of that transitional people of Lake Baikal. We are thus guided

¹ "Description of a Deformed Fragmentary Skull found in an ancient quarry-cave at Jerusalem; with an attempt to determine, by its configuration alone, the ethnical type to which it belongs." By J. Aitken Meigs, M.D. 1859.

by such indications to a region beyond the farthest limits assigned by Hippocrates, Strabo, Pliny, or Mela, to the Asiatic Macrocephali; and recover traces of the strange practice of the American Flatheads far to the north-east of the Altai chain, in the valleys that skirt the Yablonoi mountains, as they trend eastward towards the Okhotsk Sea. There it is, in the vast unknown regions of Asiatic Russia, that we may hope to recover evidence confirmatory of the Asiatic relations of the American race.

But when attention is directed to such proofs of artificial modification of the form of the human head practised by diverse tribes and nations of the Old World, new and unexpected disclosures tend still further to enlarge the areas of this strange practice. Dr. Foville, a distinguished French physician, at the head of the Asylum for the Insane in the department Seine-Inférieure and Charenton, has brought to light the remarkable fact that the practice of distorting the skull in infancy still prevails in France, by means of a peculiar head-dress and bandages; and in his large work on the Anatomy of the Nervous System, he has engraved examples of such compressed heads, one of which might be mistaken for a Peruvian relic. The usage is probably one inherited from times of remote antiquity, and is found chiefly to characterise certain districts. Normandy, Gascony, Limousin, and Brittany are specially noted for its prevalence, with some local variations as to its method and results. Like other ancient customs, it is probably pursued with the unreasoning adherence to immemorial custom by which many equally useless practices have been perpetuated, and with no definite aim at changing the form of the head.

In a section of the *Crania Britannica*, devoted to Distortions of the Skull, two remarkable examples are engraved, derived from Anglo-Saxon graves, and others are referred to, found in British barrows; but those Dr. Thurnam and Dr. Davis concur in ascribing to causes operating subse-

quent to interment. The influence to which such posthumous change of cranial form is chiefly ascribed, is the pressure of the superincumbent earth upon the skulls, where bodies have been interred, unprotected by coffins, and exposed to an unusual amount of moisture.

The geologist has long been familiar with the occurrence of skulls distorted, or completely flattened; and even with solid bones and shells which have undergone remarkable transformations, by compression or distension operating on their rocky matrix before it assumed its final consolidation. In some of those cases, however, the palæontologist looks in reality only on the cast of the ancient bone or shell, compressed along with its once plastic matrix, probably at a date long subsequent to its original deposition. But the distortion by which the human skulls referred to have acquired their abnormal shape, must have taken place while the animal matter still remained in sufficient abundance to preserve the original flexibility of the bones. At the base of the Montreal mountain, on a site identified with much probability as that of Hochelaga, an Indian village visited by Cartier in 1535, an ancient cemetery has been brought to light. Two of the skulls recovered from it, now in the museum of M'Gill College, Montreal, are those of a man and woman, whose remains were found together, as they had been buried, in the sitting or crouching position common in Indian sepulture. The female skull has the superciliary ridge very prominent, with a groove above it, while a prolongation of the occiput, frequently seen in the female cranium, gives a peculiarly marked predominance to the longitudinal diameter. The other (Fig. 130) is the skull of a man about forty years of age, approximating to the common proportions of the Algonquin cranium, but presenting unmistakable indications of having undergone alteration in shape subsequent to interment. It is marked by great but unequal depression of the frontal bone, with considerable lateral distortion, accompanied with bulging out on the

right side, and an abnormal configuration of the occiput, suggestive at first sight of the effects of the familiar native processes of artificial malformation during infancy. Such an idea, however, disappears on minute inspection, and it seems impossible to doubt that, in this Indian skull, we have a striking example of posthumous distortion. The right side of the forehead is depressed, and recedes so far behind the left, that the right external angular process of the frontal bone is nearly an inch behind that of the left side. The skull recedes proportionally on the same side throughout, with considerable lateral development at the parietal protuberance, and a projection behind on the right



FIG. 139.—Hochelaga Skull.

side of the occiput; which is further marked by the occurrence of an irregular group of Wormian bones. The right superior maxillary and malar bones have become detached from the calvarium, but the nasal bones, and part of the left maxillary, still adhere to it, exhibiting in the former the evidence of the well-developed and prominent nose, characteristic of Indian physiognomy. The bones of the calvarium have retained their coherence, notwithstanding the great distortion which has taken place, although the sutures remain entirely unossified, and must have given way under any unequal pressure. The only exceptions to this are: the left temporal bone, which is so far displaced as to detach the upper edge of the squamous suture; and

the basilar portion of the occipital bone, part of which is wanting. On examining the base of this skull, the posthumous origin of its distortion is most readily perceived; and this is proved beyond doubt on replacing the condyles of the lower jaw in apposition with the glenoid cavities, when it is seen that instead of the first teeth meeting the corresponding ones of the upper jaw, the lower front right and left incisors both impinge on the first right canine tooth of the upper maxillary, and the remaining teeth are thereby so placed as to preclude the possibility of their use in mastication, had such been the relative position of the jaws during life. The same distortion which has thus displaced the glenoid cavities, has produced a corresponding change on the position of the mastoid processes, which are twisted obliquely, so that the left one is more than an inch in advance of the right.

The circumstances under which the Hochelaga skull was found, tend to throw some light on the probable causes which may effect such posthumous malformation. It was covered by little more than two feet of sand, the pressure of which was in itself insufficient to have occasioned the change of form. The internal cavity, moreover, was entirely filled with the same fine sand in which the skull was imbedded. If, therefore, we conceive of the body lying interred under this slight covering of soil until all the tissues and the brain had disappeared, and an infiltration of fine sand had filled the hollow brain-case; and then, while the bones were still replete with animal matter, and softened by being imbedded in moist sand, and filled with the same, if some considerable additional pressure, such as the erection of a heavy structure, or the sudden accumulation of any weighty mass, took place over the grave, the internal sand would present sufficient resistance to the superincumbent weight, applied with nearly equal pressure on all sides, to prevent the crushing of the skull, or the displacement of the bones, while they would readily yield

conformably to the general compression of the mass. The skull would thus be subjected to a process closely analogous to that by which the abnormal developments of the Flat-head crania are effected during infancy, accompanied by great relative displacement of the cerebral mass, but by little or no diminution of the internal capacity.

In the remarkable example in Dr. Thurnam's collection, of a distorted Anglo-Saxon skull, from Stone, in Buckinghamshire,¹ there are indications, especially in the detached and gaping sutures on the base, that it has been subjected to an extraordinary amount of oblique compression. But such posthumous malformations are not to be confounded with the more numerous changes effected on the form of the living head. Crania recovered from British stone cists, entirely protected from contact with the soil, frequently exhibit considerable irregularity of form, arising from accidental deformation during life; and corresponding modern examples are less rare than is supposed. The normal skull may be assumed to present a perfect correspondence on its two sides, but very few examples fully realise the requirements of such a standard. Not only is inequality in the two sides of frequent occurrence, though not to the extent of deformity exhibited in the skull from Stone, in Buckinghamshire, or that of the Indian cemetery of Hochelaga; but a perfectly symmetrical skull is the exception rather than the rule. The plastic character of the bones of the head during infancy, which so readily admits of purposed deviation from its natural form, also renders it liable to many undesigned changes. More than one case has fallen under my notice of heads flattened on one side, and otherwise deformed, owing to the mother being able only to suckle at one breast.² The skull is then in so pliant a condition as to be susceptible of abnormal changes of form which may be carried to a great extent without affecting the functions of

¹ *Crania Britannica*, chap. iv. p. 38.

² Vide *Canadian Journal*, vol. vi. 414; vii. 399; viii. 127.

the brain. Moreover, it is apparent, from illustrations already referred to, that many undesigned changes may be effected on the form of the head, by specialities pertaining to modes of nursing, or the prevailing treatment to which children are subjected. The cranial form, designated by M. Foville the *Tête annulaire*, may have predominated for many centuries through certain rural districts of France, solely from the unreasoning conformity with which the nurse adhered to traditional and prescriptive usages, such as all experience assures us are among the most likely customs to survive the shock of revolutions. The mode of nursing and carrying the infant, as among certain African tribes, where it is borne on the back, and suckled over the shoulder; or with the American Indians, where it is strapped tightly on a cradle-board: must affect the form of the skull, and even, in the former, the bones of the face; whilst the opposite practice of suckling the child at the breast, and laying it to sleep from earliest infancy on its side, especially if accompanied with a persistent adherence to one side, must tend to modify the cranial form in an inverse direction.

Dr. Morton recognised this element, as one tending to exaggerate, though not, as he believed, wholly to produce the flattened occiput, assigned by him as one of the cranial characteristics of the American aborigines. Nor did he fail to note the frequent irregularities observable in the class of skulls to which his attention was specially devoted. Of the Scioto Mound cranium, he remarks, in reference to its vertical occiput: "Similar forms are common in the Peruvian tombs, and have the occiput, as in this instance, so flattened and vertical, as to give the idea of artificial compression; yet this is only an exaggeration of the natural form caused by the pressure of the cradle-board in common use among the American nations." When commenting on this, in discussing the supposed prevalence of one cranial type throughout the American aborigines,¹ I expressed my

¹ *Canadian Journal* (1857), vol. ii. p. 406.

belief that further investigation would tend to the conclusion that the vertical or flattened occiput, instead of being typical, pertains to the class of artificial modifications familiar to the American ethnologist, alike in the disclosures of ancient graves, and in the customs of widely-separated living tribes. Vesalius is quoted, in the *Crania Britannica*, as affirming that the Germans of his day, the middle of the sixteenth century, had a broad head with compressed occiput, which he attributed to the custom of binding infants in cradles upon their backs. In commenting on the assumed irregularity of conformation in American crania, I remarked in the paper already referred to, "I have repeatedly noted the like unsymmetrical characteristics in the brachycephalic crania of the Scottish barrows; and it has occurred to my mind on more than one occasion, whether such may not furnish an indication of some partial compression, dependent, it may be, on the mode of nurture in infancy having tended in their case also, if not to produce, to exaggerate the short longitudinal diameter, which constitutes one of their most remarkable characteristics." The first British example of this peculiar formation which attracted my attention, and suggested the idea of its probable origin from artificial causes, was recovered from a stone cist, accidentally discovered at Juniper Green, near Edinburgh, in May 1851. The circumstances of its discovery are described, and other Scottish examples of the vertical or obliquely flattened occiput referred to, in my *Prehistoric Annals of Scotland*;¹ and more recently His Grace the late Duke of Northumberland showed me, at Alnwick Castle, the skull of a youth, recovered along with an urn from a stone cist in Hulne Park, in which the same occipital peculiarity is noticeable. Dr. L. A. Gosse arrives at a like conclusion on the general subject; and, after commenting on the prevalence of this formation in American crania, he remarks: "Passing to the Old World we cannot hesitate to recognise that the flat and

¹ *Prehistoric Annals of Scotland*, 2d ed. vol. i. p. 271.

hard cradle has there produced analogous effects. The ancient inhabitants of Scandinavia and Caledonia practised the same custom, if one may judge from the form of their skulls.¹ Drs. Thurnam and Davis recognise the same cause, in the later decades of their *Crania Britannica*, as one of the artificial sources of conformation affecting an important class of skulls derived from British graves. Mr. Thomas Bateman also noted the form occurring in crania obtained by him from Derbyshire barrows, as described in his *Ten Years' Diggings in Celtic and Saxon Grave Hills*. To this source one class of brachycephalic skull-forms is referred; and the inference deducible from it, that the cradle-board was in use among primitive races of Britain and the north of Europe, at some remote period, is now sanctioned by the concurrence of distinguished European craniologists. But extended observation shows that similar practices still prevail in other parts of the world. Dr. Nott and Dr. Pickering both recognised the flattened occiput among islanders of the Southern Ocean, traceable to artificial pressure. In commenting on the characteristics of the Malay race, Dr. Pickering observes: "A more marked peculiarity, and one very generally observable, is the elevated occiput, and its slight projection beyond the line of the neck. The face, in consequence, when seen in front, appears broader than among Europeans, as is the case with the Mongolian, though for a different reason. In the Mongolian the front is depressed, or the cranium inclines backwards, while in the Malay it is elevated or brought forwards. The Mongolian traits are heightened artificially by the Chinooks; but it is less generally known that a slight pressure is often applied to the occiput by the Polynesians, in conformity with the Malay standard."² Dr. Nott describes the same peculiar conformation in the head of a Kanaka who died at the Marine Hospital at Mobile. "The skull," he says, "was

¹ *Essai sur les Déformations artificielles du Crâne*, p. 74.

² Pickering's *Races of Man* (Bohn), p. 45.

presented to Agassiz and myself for examination without being apprised of its history. Notwithstanding there was something in its form which appeared unnatural, yet it resembled more than any other the Polynesian; and as such we did not hesitate to class it. It turned out afterwards that we were right; and that our embarrassment had been produced by an artificial flattening of the occiput, which process the islander, while at the hospital, had told Drs. Levert and Martin was habitual in his family."¹ Dr. J. B. Davis has procured a large series of Kanaka skulls, chiefly through the intervention of the British Consul-General at Honolulu, and in many of them the same flattening of the occiput is remarkably expressed.² I have myself noted it clearly defined in at least three of the Kanaka skulls in the Academy of Natural Sciences at Philadelphia; and more recently, during a prolonged visit to Washington, I had repeated opportunities of carefully studying the collection of crania formed by the United States Exploring Expedition. These are chiefly derived from the islands of the Pacific, and include fourteen Kanaka skulls. Both in those from the Sandwich Islands, and from other archipelagoes of the Pacific, several striking examples of the artificially flattened occiput confirm the opinions formed by Dr. Pickering, from his ample opportunities of observation, and his comparison of the Asiatic Mongolian and the islanders of the Pacific.

Professor Retzius, after commenting on the unnatural deformations which medieval chroniclers ascribe to the Huns, adds: "Thus we see more and more traces showing that this absurd custom has been common in the ancient world; and, after the authority of Thierry, we may suppose that it principally, and perhaps originally, belonged to the Mongols."³ But it is among these very Mongols that Dr.

¹ *Types of Mankind*, p. 436.

² *Crania Brit.*, Decade iii. pl. 23, p. 4.

³ "On Artificially-formed Skulls from the Ancient World," *Proceed. Acad. Nat. Sciences, Philadelphia*, vol. vii. p. 405.

Pickering classes the Chinook Flatheads and all the Indians of the American continent; and thus, by the help of ancient historians and geographers, and the recent discoveries and observations of scientific men, we recover traces of artificial distortion of the skull in ancient European cemeteries among the valleys of the Alps, on the banks of the Danube and the Don, and on the shores of the Euxine Sea. Beyond this the same practice is found, in ancient times, in the valleys of the Caucasus and on the shores of the Caspian Sea; and as we follow back the track of the Huns and Avars, by whom it seems to have been introduced into Europe, we lose the traces of it among the unfamiliar Siberian steppes of Northern Asia; and only recover them after crossing Behring Strait, and investigating the strange customs which pertain to the American tribes on the Pacific Coast.

The artificial forms given to the human head by the various tribes among whom the custom has been practised in ancient and modern times, though divided by Dr. Gosse of Geneva into sixteen classes, range between two extremes. One of these is a combined occipital and frontal compression, reducing the head as nearly as possible to a disk, having its mere edge laterally, as in the very remarkable Natchez skull, engraved in the *Crania Americana* (Plates XX. XXI.); in Cawwelitcks, a woman of the Cowlitz tribe of the Flat-head Indians, as shown in the frontispiece to this volume, drawn from sketches taken by Mr. Paul Kane, during his wanderings among the tribes on the Cowlitz river. The other form, which is more common among the Flathead tribes on the Columbia river and its tributaries, depresses the forehead, and throws back the whole skull, so as to give it a near approximation to that of a dog.

The influence of premature ossification of the sutures on the production of certain abnormal skull-forms has of late years attracted considerable attention. In 1851, Professor Virchow of Berlin described and figured various abnormal

forms dependent, as he conceived, on the arrestment of development in certain directions by synostosis.¹ Subsequently Dr. Minchin, of Dublin, traced a peculiar elongated head to the absence of the sagittal suture;² and Dr. Wm. Turner, of Edinburgh, in a memoir submitted to the British Association in 1863, defines among the chief sources of cranial deformation "the premature or retarded union of the cranial bones at their sutures;" and specially refers to the former of these causes certain Scottish examples of the peculiar elongated skull, to which Professor von Baer, of St. Petersburg, has applied the name *scaphocephalic*.³ The impediments to lateral or vertical enlargement of the cranium, consequent on the closing of the sagittal suture, and the subsequent expansion of the brain exclusively in an antero-posterior direction, must tend to the production of an elongated skull; while, on the contrary, the premature ossification of the sphenoidal and coronal sutures leaves the brain free to expand only in a lateral and vertical direction. But it is necessary, in studying the relations traceable between the conditions of the sutures and the form of the head, to guard carefully against mistaking cause for effect.

Since the publication of the first edition of this work I have availed myself of renewed opportunities for minutely examining the large collection of artificially flattened crania in the Mortonian Collection at Philadelphia; and of another at Washington, including thirty-four Flathead skulls obtained by the United States Exploring Expedition on the Oregon Coast and the Columbia River. Many of those have been subjected to extreme and protracted pressure, resulting in great deformity; and in the majority of these synostosis has taken place in the direction of greatest pressure, to so great an extent that in some cases the suture is entirely obliterated. In several of them the opposite

¹ *Warsburg Verhand.* Bd. 2. S. 230. and W. Turner, R.D.

² *Dublin Quart. Medical Journal*, vol. xxii. p. 350.

³ *Nat. Hist. Review*, No. xlii. p. 83, Jan. 1864.

sutures are not only detached but even disengaged. The pressure has also in some cases developed false sutures ; and to the same cause may probably be traced the frequent occurrence of Wormian bones, and of a well-defined supra-occipital. In all those examples the ossification of the sutures is clearly the result, and not the cause, of the influence which produced the peculiar cranial deformations. But it is marvellous to see the extraordinary amount of distortion to which the skull and brain may be subjected,



FIG. 131. — *Newatee Chief.*

without seemingly affecting the essential elements of healthy growth.

Fashion regulates to some extent the special form given to the head among various tribes ; but this is modified by individual caprice, and a considerable variety is observable in the strange shapes which it is frequently forced to assume. The Newatees, a warlike tribe on the north end of Vancouver Island, give a conical shape to the head by means of a thong of deer's-skin, padded with the inner bark of the cedar tree frayed until it assumes the consistency of very

soft tow. This forms a cord about the thickness of a man's thumb, which is wound round the infant's head, compressing it gradually into a uniformly tapering cone. The process seems neither to affect the intellect nor the courage of this people, who are remarkable for cunning as well as fierce daring, and are the terror of all the surrounding tribes. The effect of this singular form of head is still further increased by the fashion of gathering the hair into a knot on the crown of the head, as shown in the accompanying portrait of a Newatee chief (Fig. 131), from a sketch taken by the late Paul Kane during his visit to Vancouver Island.

During Mr. Kane's travels among the tribes on the Columbia River, he saw hundreds of their children undergoing the process of flattening the head, and thus described the mode of procedure. The infant is strapped to the cradle-board, which is covered with moss or finely frayed fibres of cedar bark, and is fitted with a head-board projecting beyond the face, so as to protect it from injury; as shown in the frontispiece. In order to flatten the head, a pad, made of a piece of skin stuffed with soft cedar bark, is laid on the infant's forehead, and on the top of this a slab of hard bark with the smooth side under. This is covered with a piece of pliant deer-skin, and bound tightly by means of a leathern band passing through holes in the cradle-board. Other pads are placed under the head, and at its sides, according to the special form aimed at; and it is supported and kept in an immovable position by a pillow of grass or frayed cedar bark under the back of the neck. This process commences immediately after the birth of the child, and is continued for a period of from eight to twelve months, by which time the head has permanently assumed the flattened or wedge-shaped form, which constitutes the ideal of Chinook or Cowlitz grace. Mr. Kane remarks: "It might be supposed, from the extent to which this is carried, that the operation would be attended with great suffering, but I never heard the infants crying or moaning, although I have

seen the eyes seemingly starting out of the sockets from the great pressure. But, on the contrary, when the thongs were loosened, and the pads removed, I have noticed them cry until they were replaced. From the apparent dulness of the children whilst under the pressure, I should imagine that a state of torpor or insensibility is induced, and that the return to consciousness occasioned by its removal must be naturally followed by the sense of pain." The woodcut, Fig. 132, is from a careful sketch of a Chinook child, made at Fort Astoria on the Columbia river, and illustrates the



FIG. 132.—Flathead Child.

extraordinary appearance of the Flatheads at an early age. Mr. Hale, the ethnographer of the Exploring Expedition, in narrating his observations in the same locality, remarks: "The appearance of the child when just released from this confinement is truly hideous. The transverse diameter of the head above the ears is nearly twice as great as the longitudinal, from the forehead to the occiput. The eyes, which are naturally deep set, become protruding, and appear as if squeezed partially out of the head;"¹ or, as Mr. Kane somewhat graphically described them to me, resem-

¹ *Ethnography of the U. S. Exploring Expedition*, p. 216.

bling those of a mouse strangled in a trap. The appearance is little less singular for some time after the child has been freed from the constricting bandages ; but the brain in its process towards maturity seems partially to recover its form, especially where the pressure has been applied so as to produce the elevated wedge shape, with the breadth of the whole mass presented in front and rear, as in the accompanying example. In this the head seemed to be reduced almost to a disk, exhibiting the results of the barbarous practice to an extent rarely if ever observed in adults who have undergone the same process in infancy. Dr. Pickering, Mr. Hale, and Mr. Kane all agree in the conclusion that this violent process in no degree injures the health ; and from inquiries made by them it did not appear that the mortality among the Flathead children is greater than amongst other Indian tribes.

The evidence that cranial deformation leaves the intellect unimpaired rests on more absolute proof. The Flathead tribes are in the constant habit of making slaves of the neighbouring roundheaded Indians, whom they treat with great barbarity ; and though living among them, these are not allowed to flatten or modify the form of their infants' heads, that being a distinguishing mark of freedom, and the badge of aristocratic descent. They look accordingly with contempt on the whites as a people who bear in the shape of their heads the hereditary mark of slaves. They are, moreover, acute and intelligent, generally drive a hard bargain in the sale of their furs, possess singular powers of mimicry, and have been noted for very retentive memories : being capable of repeating passages of some length, with considerable accuracy, when recited in their hearing. It would, indeed, appear that, alike in the time of Hippocrates and in our own day, an idea has prevailed among those who practised the strange barbarian usage, that they thereby not only conferred an added grace to the form, but contributed to the mental superiority of those who acquired this

peculiar symbol of aristocracy. If it did, in reality, tend to produce mental inferiority, it would lead to speedy and inevitable revolutions among those tribes where the helots are rigorously excluded from the practice. But neither among the Peruvians, nor the ancient or modern North American tribes, is there any evidence of the normal cranium having thus practically demonstrated its superiority over the deformed or flattened skull.

It is an important fact that—excepting on the Gulf of Florida, where the north-west tribes overlapped the mountain range which divides the Pacific from the Atlantic regions, and there only to the west of the Mississippi,—the traces of artificial moulding of the head are slight and quite exceptional to the east of the Rocky Mountains; whilst along the regions that border on the Pacific they reach beyond the most southern limits of ancient Peru. Dr. Morton quotes various early Spanish historians and travellers who describe the Peruvian flattening or moulding of the skull as having been effected by means of boards strapped on the head. Garcilasso de la Vega produces proof to show that the custom is more ancient than the Inca dynasty; and it continued in such favour after the conquest, that a decree of the Ecclesiastical Court of Lima, published in 1585, threatens with severe penalties all parents found persisting in the practice. But perhaps the most interesting passage is one from the writings of Torquemada, where, referring to the Peruvians, he remarks: "As to the custom of appearing fierce in war, it was in some provinces ordered that the mothers or their attendants should make the faces of their children long and rough, and the foreheads broad, as Hippocrates and Galen relate of the Macrocephali, who had them moulded by art into the elevated and conical form. This custom," he adds, "is more prevalent in the province of Chicuito than in any other part of Peru." In spite of ecclesiastical censures and penalties, it is not even now extinct there; and as our

knowledge of the tribes of Northern Asia, and minuter observations on those of the Polynesian Islands, are extended, we may anticipate the recovery of further traces of the same practice, which seems to furnish another curious link between races of the Old and the New World.

CHAPTER XXII.

THE RED BLOOD OF THE WEST.

THE INDIGENOUS RACE—HISTORICAL RECORDS PERISHING—THE AMERICAN MONGOL—DISPLACEMENT OF NATIONS—AMERICAN ISOLATION—EXTINCTION OF RACES—DESCENDANTS OF HAM—THE CANAANITES—THE MEDITERRANEAN SHORES—EXTIRPATION OF THE CANAANITES—MINGLING OF RACES—PREHISTORIC POPULATION OF EUROPE—ABSORPTION—RED AND WHITE BLOOD—AMERICAN HALF-CASTES—TRACES OF MIXED BLOOD—CANADIAN HALF-BREDS—FIRST STAGE OF COLONISATION—DISPROPORTION OF SEXES—TRIBE OF HALF-BREDS—INTERMIXTURE OF RACES—NEW PROVINCE OF MANITOBA—THE CHIEF BUSHWICKER—WHITE AND INDIAN INTERMARRIAGE—RED RIVER HALF-BREDS—THE HALF-BRED HUNTERS—APTITUDE FOR SELF-GOVERNMENT—THE EUROMERUCAN—UNSTABLE EQUILIBRIUM—INDIAN EXTERMINATIONS—THE CANADIAN NATIONS—THE HUDON COUNTRY—THE NEUTRAL NATION—THE HURONS AND ERIES—THE MOHAWKS—THE SIX NATIONS—DESTINY OF THE IROQUOIS—THE CHEROKEES—SLAVEHOLDING INDIANS—RESULTS OF THE CIVIL WAR—INDIAN COLOUR—IROQUOIS OF ST. REGIS—THE AGENAKIS—THE HURONS OF LORETTE—THE MICMACS—WILD FOREST TRIBES—THE MONTAGNARS—THE UNSETTLED TRIBES—THE INDIANS OF UPPER CANADA—WYANDOTS OF ANDERDON—RAY OF QUINTE MOHAWKS—THEIR MIXED BLOOD—SEMI-CIVILISATION—SOURCES OF HYBRIDITY—THE ONEIDAS—THE SEMI-CIVILISED INDIANS—RELATIONS TO THE WHITE RACE—INFLUENCES OF ADMIXTURE—BLENDING OF ETHNICAL ELEMENTS.

THE theory of an aboriginal unity pervading one indigenous American race from the Arctic Circle to Tierra del Fuego has been shown to be baseless. The proof that the American man is in any sense separated by essential physical differences from all other nations or races of the human family, in like manner fails on minute examination. The typical white, red, and black man, placed side by side, do indeed present strikingly contrasting characteristics; and the author still recalls with vivid force the question forced on his mind when, seated for the first time at a large public table in a southern American city, he found himself surrounded by the proscribed pariah race of Africa. A

servile people, isolated from all community of interests, and from all share in the wondrous triumphs of the dominant race, presented itself there under aspects scarcely conceivable to the European, who sees a stranger of African blood mingle occasionally, like any other foreigner, in public assemblies or social circles, without being tempted to ask : Can he be indeed of one blood, and descended of the same parent stock with ourselves ? But the isolation of the Red Man is even greater, for it is voluntary and self-imposed. No prejudice of caste precludes him from equality of intercourse with the white supplanter. Intermarriage of the races carries with it no sense of degradation, and intermingling of blood involves no forfeiture of rights or privileges. Yet with all the advantages from which the African race was till recently so utterly excluded, he yields his ground even more rapidly than the encroachments of the intrusive supplanners demand ; and seems to disappear scarcely less swiftly under the guardianship of friendly superintendents and missionary civilisers, than when exposed to the exterminating violence of Spanish cupidity.

Upwards of three centuries and a half have elapsed since the landing of the Spanish discoverers on the first-seen island of the Western Hemisphere ; and it may be doubted if a single year has passed since that memorable event, in which some historical memorial has not perished. But the most irrecoverable of all those records are the nations that have died and left no sign. The native races of the islands of the American archipelago have been exterminated ; and of many of them scarcely a relic of language, or a memorial of their arts, social habits, or religious rites, survives. So, in like manner, throughout the older American States, in Canada, and over the vast region which spreads westward to the Rocky Mountains, whole tribes and nations have disappeared, without even a memorial-mound or pictured grave-post to tell where the last of the race is returning to his native earth. Keeping this in view, it is impossible, while regarding the claims of the American as a

strictly indigenous race, to overlook the significant fact, that the negro, a foreign race, most diverse of all from the aborigines of the New World, was introduced there solely because of a capacity of endurance, which is wanting in the children of the soil. This, experience has proved him to possess; and the fact is singularly at variance with the supposed application of the same laws to the races of man which control the circumscription of the natural provinces of the animal kingdom.

The aborigines of America are indeed a people by themselves. For unknown ages they have developed all the results of physical influences, habits of life, and whatever peculiarities pertained to their geographical position, or their primeval American ancestry. Yet when we go beyond that continent which has isolated them through all the unmeasured centuries of their independent existence, it is on the neighbouring continent of Asia that we find an ethnic type so nearly resembling them, that Dr. Charles Pickering, the ethnologist of the American Exploring Expedition, groups the American with the Asiatic Mongolian, as presenting the most characteristic physical traits common to both. And as the American thus presents a striking ethnical affinity to the Asiatic Mongol; so also, among different tribes and nations of the New World, the same physical diversities have been noted, by which other great ethnographic groups are broken up into minor subdivisions, and so gradually converge from opposite points towards the ideal type of a common humanity. But while those who maintain the existence of essentially primary distinctions among a plurality of human species, explain such convergence towards one common type by the further theory of remote, allied, and proximate species, they accompany this with the idea that even the commingling of proximate species is opposed to natural laws, and involves the ultimate destruction of all; while the rapid extinction of the inferior types of man when "remote species," such as the European and the Red Indian, are brought into contact and commingle,

is produced in evidence of an essential and primary distinction in their origin. "Sixteen millions of aborigines in North America," exclaims Dr. J. C. Nott, "have dwindled down to two millions since the 'Mayflower' discharged on Plymouth Rock; and their congeners, the Caribs, have long been extinct in the West Indian Islands. The mortal destiny of the whole American group is already perceived to be running out, like the sand in Time's hour-glass."¹

By whatsoever means we may attempt to account for this rapid diminution of the aborigines, the fact is undoubted. Nor is this displacement and extinction of races of the New World, thus prominently brought under our notice as in part the result of our own responsible acts, by any means an isolated fact in the history of nations. The revelations of geology disclose displacement and replacement as the economy of organic life through all the vast periods which its records embrace; and among the many difficult problems which the thoughtful observer has to encounter, in an attempt to harmonise the actual with his ideal of the world as the great theatre of the human family, none is more perplexing than the extinction of races, such as has been witnessed on the American continent since the European gained a footing on its shores. But the very existence of a science of ethnology results from the recognition of essential physical and moral differences characteristic of the subdivisions of the human family. To some those resolve themselves into the radical distinctions of diverse species; to others the well-ascertained development of varieties within recognised groups of a common descent sufficiently accounts for the most marked diversities from a normal type of the one human species. On the latter theory, the New World presents all the requisites for such a development of variations from the primary type.

The whole history of civilisation limits its Asiatic origin

¹ "Hybridity of Animals, viewed in connection with the Natural History of Mankind."—*Types of Mankind*, p. 409.

to the shores of the Indian Ocean and the Mediterranean Sea, and to the great plain watered by the Tigris and the Euphrates. From thence its path has been undeviatingly westward, and the New World has been reached by the daring enterprise that made of the ocean a highway to the West which lay beyond it. But it is in the great steppes of Northern Asia, where civilisation has never dawned, that the eastern Mongol presents the unmistakable approximation to the American type of man. Through all the centuries during which nations have figured in the drama of history, since Asshur and Nimrod founded the first Asiatic kingdoms, the unhistoric nations have also played their unheeded parts. Westward went the ruling nations, shaping out the world's destinies in the Northern Hemisphere; but eastward, meanwhile, wandered the nomad tribes, filled up the great Asiatic steppes, occupied the unclaimed wastes along the Arctic circle, and found an easy passage to the Western Hemisphere. That this is not the only, nor probably the earliest route from Asia to America, will be seen hereafter; but it suffices for the present argument that access was thus possible. There settled, they took possession of a continent as different in every physical characteristic from that of Europe as it is possible for countries within the same parallels of latitude to be. In vain we search through all the world's ancient and medieval history for a definite trace of intercourse between the two hemispheres; and when at length, in 1492, Columbus opened for us the gates of the West, it was the meeting of those who, by opposite courses, had fled from each other until the race engirdled the globe. Assuming their common descent: if climate, social habits, civilisation, and the perpetuation of special peculiarities uninterruptedly in a single direction, are capable of producing a permanent variety of the human race, the continent of America and its occupants presented all the requisites for its development.

But the circumstances in which man was placed on the American continent were not the most favourable for his

intellectual maturity. Even in single families, a great diversity of physical and intellectual capacity is apparent; and among the family of nations the Asiatic Mongol, who presents the closest affinity to the American Indian, occupies an inferior place. Brought from his wild steppes, directly in contact with the advanced civilisation of Europe, he is utterly incapable of standing his ground; yet when placed under favourable circumstances of training and pupilage, as seen in the older Hun, the Magyar, and the Turk, he is fully able to assert the claims of a common humanity. But no such opportunities were accorded to the American Mongol. We see him in the fifteenth and subsequent centuries brought into contact and collision with the most civilised nations of the world, in periods of their matured energy. It was the meeting of two extremes: of the most highly favoured among the nations triumphing not less by constitutional superiority than by acquired civilisation; and of the savage, or the semi-civilised barbarian, in the stages of national infancy and childhood. Their fate was inevitable. It does not diminish our difficulty in dealing with the complex problem, to know that such had been the fate of many races and even of great nations before them. But if we are troubled with the perplexities of this dark riddle, whereby the colonists of the New World, in their western progress, tread on the graves of nations which they have supplanted: the consideration of some of the phenomena attendant on this process of displacement and extinction accompanying the human race from the very dawn of its history, may help to lessen the mystery.

On turning to the Mosaic narrative as the most ancient of all writings embodying a record which deals with certain fundamental questions of ethnical science, one important subdivision of the human family is there stamped, *ab initio*, with the marks of degradation; while another, the Shemitic, though endowed with special privileges, favoured as the originator of the world's civilisation, and set apart to furnish

the chosen custodiers of its most valued inheritance, through centuries which anticipated the fulness of time : is nevertheless destined to displacement, for "Japhet shall be enlarged, and shall dwell in the tents of Shem." Thus from the very first, clearly defined distinctions are implied between diverse branches of the human family ; and this is coupled with the apportionment of the several regions of the earth to distinct types of man.

There have been ingenious attempts made to assign to each generation of the Noachic family its national descendants ; but the majority of such results commend themselves to our acceptance at best as only clever guesses at truth. Of the most remarkable of the Hamitic descent, however, we can be at no loss as to their geographical areas. The Canaanites occupied the important region of Syria and Palestine ; and Nimrod, the son of Cush, moving to the eastward, settled his descendants on the banks of the Euphrates ; so that of the distinctly recognisable generations of Ham, it is in Asia, and not in Africa, that we must look for them, for centuries after the dispersion of the family of Noah ; while among those who, on such an assumption of descent, may be classed with the offspring of the same father of nations, are the Mongol wanderers on the great steppes of Asia, and the region stretching eastward towards the passage to the New World.

But the Shemitic races were also to share the Eastern Continent before they enlarged their area, and asserted their right to the inheritance of the descendants of Ham. By Nimrod, the grandson of Ham, the settlements along the valley of the Euphrates were founded, "and the beginning of his kingdom was Babel, and Erech, and Accad, and Calneh, in the land of Shinar," all sites of ancient cities which recent exploration and discovery seem to indicate as still traceable amid the graves of the East's mighty empires. But the eponymus of the rival kingdom on the banks of the Tigris was Asshur, the son of Shem ; and in that region

also it would appear that we must look for the locality of others of the generations of the more favoured stock ; while nearly the whole habitable regions between their western borders and the Red Sea, were occupied from this very dawn of history, by the numerous descendants of Joktan of whom came Mohammed and the first propagators of the monotheistic creed of the Koran ; as the Hebrews, and through them the great prophet of our faith, trace their genealogy from Eber, the assumed eponymus of those whom we must look upon, on many accounts, as important above all other Shemitic nations.

From the same record we ascertain as the result of the multiplication and dispersion of one minutely detailed generation of the sons of Ham, through Canaan, that for eight hundred years thereafter they increased and multiplied in the favoured lands watered by the Jordan, and stretching to the shores of the Levant ; they founded cities, accumulated wealth, subdivided their goodly inheritance among distinct nations and kingdoms of a common descent ; and upwards of eleven hundred years afterwards, when the intruded tribe of Dan raised up the promised judge of his people, the descendants of Ham still triumphed in the destined heritage of the seed of Eber. At length, however, the Hebrew accomplished his destiny. The promised land became his possession, and the remnant of the degraded Canaanite his bond-servants. For another period of more than eleven hundred years the Shemitic intruders made the land their own. The triumphs of David, the glory and the wisdom of Solomon, and the vicissitudes of the divided nationalities of Judah and Israel, protracted until the accomplishment of the great destiny of the princes of Judah, constitute the epos of those who supplanted the elder settlers in the historic lands lying between the mountains of Syria and the sea. Then came another displacement. The Hebrews were driven forth from the land ; and for eighteen hundred years, Roman and Saracen, Frank, Turk,

and Arab, have disputed the possession of the ancient heritage of the Canaanite.

For very special and obvious reasons the isolation of the Hebrew race, and the purity of the stock, were most carefully guarded by the enactments of their great lawgiver, preparatory to their taking possession of the land of Canaan; yet the exclusive nationality and the strictly defined purity of race admitted of striking exceptional deviations. While the Ammonite and the Moabite are cut off from all permissive alliance, and the offspring of a union between the Hebrew and these forbidden races is not to be naturalised even in the tenth generation; the Edomite, the descendant of Jacob's brother, and the Egyptian, are not to be abhorred, but the children that are begotten of them are to be admitted to the full privileges of the favoured seed of Jacob in the third generation.

This exception in favour of the Egyptian is remarkable. The ostensible reason, viz., that the Israelites had been strangers in the land of Egypt, appears inadequate to account for it, when the nature of that sojourn and the incidents of the Exodus are borne in mind; and would tempt us to look beyond it to the many traces of Shemitic character which the language, arts, and civilisation of Egypt disclose. But its monuments record the evidence of many intrusions; and beyond it, throughout the northern regions of the same continent, Phœnician and Greek, Berber, Roman, Arab, and Frank have mingled the blood of the ancient world. Around the shores of that expressively designated *Mediterranean Sea* how striking are the varied memorials of the past! A little area may be marked off on the map, environing its eastern shores, and constituting a mere spot on the surface of the globe; yet its history is the whole ancient history of civilisation, and a record of its ethnological changes would constitute an epitome of the natural history of man. All the great empires of the Old World clustered around that centre, and as Dr. Johnson remarked:

"All our religion, almost all our law, almost all our arts, almost all that sets us above savages, has come to us from the shores of the Mediterranean." Their race has succeeded race; the sceptre has passed from nation to nation, through the historical representatives of all the great primary subdivisions of the human family, and "their decay has dried up realms to deserts." It is worthy of consideration, however, in reference to our present inquiries, how far the political displacement of nations in that primeval historic area was accompanied by a corresponding ethnological displacement and extinction.

It is in this respect that the sacred narrative, in its bearings on the primitive subdivisions of the human family, and their appointed destinies, seems calculated to suggest the initiatory steps in relation to some conclusions of general application. However mysterious it be to read of the curse of Canaan on the very same page which records the blessings of Noah and his sons, and the first covenant of mercy to the human race, yet the record of both rests on the same authority. Still more, the curse was what may strictly be termed an ethnical one. Whether we regard it as a punitive visitation on Ham in one of the lines of generation of his descendants, or simply as a prophetic foretelling of the destiny of a branch of the human family, we see the Canaanite separated at the very first from all the other generations of Noahic descent as a race doomed to degradation and slavery. Nevertheless, to all appearance, many generations passed away, in the abundant enjoyment, by the offspring of Canaan, of all the material blessings of the "green undeluged earth;" while they accomplished, as fully as any other descendants of Noah, the appointed re-peopling, and were fruitful and increased, and brought forth abundantly in the earth, and multiplied therein, even as did the most favoured among the sons of Shem or Japhet. When some five centuries after the Canaanite had entered on his strangely burdened heritage, the progenitor of its later and

more favoured inheritors was guaranteed the gift to his seed of that whole land, from the river of Egypt to the great river, the river Euphrates, the covenant was not even then to take place until the fourth generation. When this appointed period had elapsed, and only the narrow waters of the Jordan lay between the sons of Israel and the land of the Canaanites, their leader and lawgiver, who had guided them to the very threshold of that inheritance on which only his eyes were permitted to rest, foretold them in his final blessing : "The eternal God shall thrust out the enemy from before thee, and shall destroy, and Israel shall dwell in safety alone." No commandment can be more explicit than that which required of the Israelites the utter extirpation of the elder occupants of their inheritance : "When the Lord thy God shall bring thee into the land, and hath cast out before thee seven nations greater and mightier than thou, thou shalt smite them and utterly destroy them ; thou shalt make no covenant with them, nor shew mercy unto them." Nevertheless we find that the Israelites put the Canaanites to tribute, and did not drive them out ; neither did they expel the Geshurites nor the Maachathites, but these dwelt still among the Israelites when the sacred narrative was penned. The children of Benjamin did not drive out the Jebusites ; but according to the author of the book of Judges, they still dwelt there in his day along with Canaanites, Hittites, Amorites, Perizzites, and Hivites ; and the children of Israel took their daughters for wives, and gave them in marriage to their sons. The Gibeonites also obtained by craft a league of amity with Israel, and remained : bondmen, hewers of wood, and drawers of water ; yet so guarded by the sacredness of the oath they had extorted from their disinheritors, that at a long subsequent date seven of the race of their supplanters, the sons and grandsons of the first Israelitish king, were sacrificed to their demand for vengeance on him who had attempted their extirpation.

In all this we see no more than is assumed to have taken place in the evolution of the most civilised of European nations. The theory of modern anthropologists assigns for Europe an aboriginal population, of which Rask assumed the Finn to be the typical survivor. Before the first Aryan wave of population of Celtic or other Indo-European type passed into Europe, it was already occupied by its own rude aborigines, just as the same Indo-European aggressors have found the New World in possession of native tribes, wherever they forced their way. But it is not alone in ancient sepulchral caves, barrows, or cairns, that the traces of the Allophylian races of Europe are found. The Melanochoi, or dark whites, of Professor Huxley's classification, are, as he says, "the Iberians and 'black Celts' of Western Europe:" nor are they a distinct group, but the result of the mixture of the Xanthochroi, or true white race—pale-skinned, blue-eyed, and with abundant fair hair,—with an inferior and primitive dark-skinned race, characterised by long, prognathous skulls, and classed with one of the very lowest of existing savage races, as the Australioid group.

There was a time when the thinly-dispersed population of Prehistoric Europe consisted of dark-skinned tribes, small in stature, and with hair and eyes of corresponding hue. Not only are their modern representatives to be found among the Lapps, Finns, and the Iberians of Northern and Western Europe: but everywhere in the British Isles, and throughout Western Europe, the Melanochoic element stands out distinctly from the predominant Xanthochroic stock, among peoples speaking a common language, and unconscious of any diversity of race. Here then we see evidences of the intermingling, and the partial absorption of the dark Australioid by the later Xanthochroi, the product of which survives in the Melanochoi of Britain, France, Germany, Spain, and Italy. In Britain the contrasting characteristics of the diverse ethnical elements attracted the attention of Tacitus in the first century of our era. In

Spain the Iberian still preserves the evidence of an individuality apart from the Indo-European races in the vernacular Euskara, while a large Moorish element in the Southern portion of the Peninsula perpetuates the results of another foreign intrusion within historic times.

The diversity apparent in the results of the meeting of dissimilar races in the Old World and the New, is due in part to the geographical characteristics of the two hemispheres. But also we assume that the disparity between the comparatively rude Aryan invaders and the prehistoric population of Europe was much less than that which places such a barrier between the English colonist and the American savage of our own day. The fair Aryan intruders, consisting mainly of male immigrants, intermarried with the native Melanochroi; just as Franks, Angles, Saxons, and Norsemen, intermarried with the native Gaulish and British women; and so modified the historic races of France and England.

From all this it would seem to be justly inferred that ethnological displacement and extinction may be regarded in many, probably in the majority of cases, not as amounting to literal extirpation; but as equivalent, in part at least, to absorption. Such, doubtless, it has been to a great extent with the ancient European Celtæ, notwithstanding the distinct historical evidence we possess of the utter extermination of whole tribes both of Britons and Gauls by the merciless sword of the intruding Roman; and such also is being the case to some extent even with the aboriginal Red Indians of the New World. It is impossible to travel in the far west of the American continent, on the borders of the Indian territories, or to visit the reserves where the remnants of displaced Indian tribes linger on in passive process of extinction, without perceiving that they are disappearing as a race, in part at least, by the same process by which the German, the Swede, the Irish, or the Frenchman, on emigrating to America, becomes in a generation or two amalgamated with the general stock.

This idea of absorption, even to a small extent, of the Indian into the Anglo-American race will not meet with ready acceptance, even from those who dwell where its traces are most perceptible ; but, fully to appreciate its results, we must endeavour to follow down the course of events by which the continent has been transferred to the descendants of its European colonists. At every fresh stage of colonisation or of pioneering into the wild West, the work has necessarily been accomplished by the hardy youths, or the hunters and trappers of the clearing. Rarely, indeed, did they carry with them wives or daughters ; but where they found a home amid savage-haunted wilds they took to themselves wives of the daughters of the soil. To this mingling of blood, in its least favourable aspects, the prejudices of the Indian presented little obstacle. Henry, in his narrative of travel among the Cristineaux on Lake Winipagon, in 1760, after describing the dress and allurements of the female Cristineaux, adds :—" One of the chiefs assured me that the children borne by their women to Europeans were bolder warriors and better hunters than themselves."¹ This idea frequently recurs in various forms. The patient hardihood of the half-breed lumberers and trappers is recognised equally in Canada and the Hudson's Bay territory, and experience seems to have suggested the same idea relative to the Esquimaux. Dr. Kane remarks that the " half-breeds of the coast rival the Esquimaux in in their powers of endurance."² But whatever be the characteristic of the Indian half breed, the fact is unquestionable that all along the widening outskirts of the newer clearings, and wherever an outlying trading or hunting post is established, a fringe of half-breed population marks the transitional border-land which is passing away from its aboriginal claimants. I was particularly struck with this during my first visit to Sault Ste. Marie, in the immediate vicinity of one of the Hudson's Bay forts, in the summer of

¹ *Henry's Travels and Adventures, 1760-1776* ; p. 249.

² *Kane's Arctic Explorations, 1853-55, vol. i. p. 246.*

1855. When on my way to Lake Superior I had passed a large body of christianised Indians assembling from various points both of the American and the Hudson's Bay territories, on one of the large islands in the River Ste. Marie; and while waiting at the Sault a considerable body of them returned, passing up in their canoes. Having entered into conversation with an intelligent American Methodist missionary, who accompanied them, I questioned him as to the amount of intermarriage or intercourse that took place between the Indians and the whites, and its probable effects in producing a permanent new type resulting from the mixture of the two very dissimilar races. His reply was: "Look about you at this moment; comparatively few of these onlookers have not Indian blood in their veins;" and such I discovered to be the case, as my eye grew more familiar with its traces. At all the white settlements near those of the Indians, the evidence of admixture is abundant, from the pure half-breed to the slightly marked remoter descendant of Indian maternity, discoverable only by the straight black hair, and a singular watery glaze in the eye, not unlike that of the English gipsy. There they are to be seen, not only as fishers, trappers, and lumberers, but engaged on equal terms with the whites in the trade and business of the place. In this condition the population of all the frontier settlements exists; and while, as new settlers come in, and the uncivilised Indians retire into the forest the mixed element disappears, it does so by absorption. The traces of Indian maternity are gradually effaced by the numerical preponderance of the European; but, nevertheless, the native element is there, even when the faint traces of its physical manifestations elude all but the observant and well-practised eye.

Nor are such traces confined to frontier settlements. I have recognised the semi-Indian features in the gay assemblies at a Canadian Governor-General's receptions, in the halls of the Legislature, among the undergraduates of

Canadian universities, and mingling in selectest social circles. And this is what has been going on in every new American settlement for upwards of three centuries. In New England, after the desolating war of 1637, which resulted in the extinction of the Pequot tribe, Winthrop thus summarily records the policy of the victors: "We sent the male children to Bermuda, by Mr. William Pierce, and the women and maid children are dispersed about in the towns."

Two diverse processes are apparent in such intermixture. Where the half-breed children remain with their Indian mother, they grow up in the habits of the aborigines, and, intermingling with the pure-blood Indians, are re-absorbed into the native stock. But when, on the contrary, they win the regard of their white father, the opposite is the case; and this occurs more frequently with the Spanish and French than with British colonists. In Lower Canada, half-breeds, and men and women of partial Indian blood, are constantly met with in all ranks of life; and the traces of Indian blood may be detected, in the hair, the eye, the high cheek-bone, and the peculiar mouth, as well as in certain traits of Indian character, where the physical indications are too slight to attract notice. An intelligent observer, long resident in Lower Canada, thus writes to me: "I do not think that people generally realise the great extent to which there is an infusion of Indian blood in the French population. In the neighbourhood of Quebec, in the Ottawa Valley, and to a great extent about Montreal, I hardly think among the original settlers there is a family in the lower ranks, and not many in the higher, who have not some traces of Indian blood. At Ottawa, where we have a large French population, I hardly meet a man—and the women show the traces even more readily,—where I should not say from the personal appearance that there was a dash of the Red-man." The Indians on the neighbouring reserves are, meanwhile, approximating no less unmistakably to the predominant white race, and only require

thorough emancipation from Government superintendence to merge into the common stock.

Dr. Tschudi, after describing the minute classification of half-castes in Peru, adds : "The white Creole women of Lima have a peculiar quickness in detecting a person of half-caste at the very first glance, and to the less practised observer they communicate their discoveries in this way with an air of triumph ; for they have the very pardonable weakness of priding themselves on the purity of their European descent." There, however, as well as in Mexico, the pride of caste interferes in no degree with the equality of the civilised half-breed ; and while many of the varieties of mixed blood are regarded as inferior to their progenitors, the *Mestizo*, or offspring of a white father and Indian mother, is believed to inherit many of the best qualities of both. Like the Canadian half-breed, however, he is deficient in steady perseverance, and irresolute ; and though capable of considerable endurance, little adapted for an independent course of action. Nevertheless, among Canadian half-breeds there are men at the bar and in the legislature ; in the church ; in the medical profession ; holding rank in the army ; and engaged in active trade and commerce. No distinctive traits separate them, to the ordinary observer, from the general community of which they form a part ; and they will disappear after a generation or two, simply by the numerical superiority of those of European descent.

With the civilised Indians it is otherwise. So long as they are kept apart on their reserves, and guarded, in a state of pupillage, from the cupidity as well as the stimulating competition of the white settler, the benevolent intentions of their guardians are defeated by the very process designed for their protection. The Indian, under such a system, can only step forth to an equality with the white man by forfeiting his claim to the Indian reserves, which he may till, but cannot sell ; and it is unquestionable that, congregated together in such settlements, under the most

careful superintendence, the Indian, robbed of the wild virtues of the savage hunter, acquires too frequently only the vices of the white man. Sir Francis Bond Head remarked, in one of the strangest official documents ever penned by a colonial governor: "As regards their women, it is impossible for any accurate observer to refrain from remarking that civilisation, in spite of the pure, honest, and unremitting zeal of our missionaries, by some accursed process, has blanched their babies' faces."¹

The Indians of Vancouver Island and the adjacent mainland, until recent years only knew the whites through their intercourse with the fur-traders of the Hudson's Bay Company. But an influx of gold-diggers has been followed by permanent colonisation; and the Province of British Columbia now includes Vancouver Island, with a local Government little disposed to look with favour on the poor savage. An occasional paper on the Columbian Mission, issued under the authority of the Bishop of Columbia in 1860, furnishes a striking illustration of the circumstances under which such a colony originates. The Indians are stated to number 75,000; but this must have been a mere guess. According to the official report of the Indian Department for 1873 the whole Indian population of the province is only 28,520. But the following returns of the missionary at Port-Douglas relative to the settlers in his district may be accepted as trustworthy:—

Citizens of United States,	.	.	.	.	73
Chinese,	.	.	.	.	37
British Subjects,	.	.	.	.	35
Mexicans and Spaniards,	.	.	.	.	29
French and Italians,	16
Coloured men,	8
Central Europe,	4
Northern Europe,	4
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Of this miscellaneous gathering only two were females.

¹ "Memorandum on the Aborigines of North America," addressed by Sir F. B. Head, to Lord Glenelg, 20th Nov. 1833.

The admixture with the native population, consequent on such a disproportion of the sexes, is inevitable ; and yet, long before the province is as old as New England, the descendants of this varied admixture of nationalities will doubtless talk as freely of "Anglo-Saxon" rights and duties as any of the older settlements.

Such is the process that has been going on since the European began his encroachments on the territory of the American aborigines. Everywhere colonisation begins with a migration chiefly composed of males ; and the consequent preponderance of females in the countries from whence they go forth gives a novel character to their ancient settlements. Not only is this observable in European immigration, but it already distinguishes the Eastern from the Western American States. From the "Abstract of the United States Census of 1860," it appeared that the females in Massachusetts outnumbered the males by more than 37,000 ; while Indiana, on the contrary, showed an excess of 48,000 males. But the latter state borders on the Indian country, where the native women help to restore an equality in the proportion of the sexes ; and the simplicity of border life removes the chief impediments to the intermixture of the races. Intermarriage of some sort is inevitable between the native race and the intruding whites, under such circumstances ; and the same process goes on there now which has been in operation from the commencement of European colonisation of the continent. Hardy bands of pioneer adventurers, or the solitary hunter and trapper, wandered forth to brave the dangers of the savage-haunted forests ; and found an Indian bride the fittest mate for the wilderness. Of the mixed offspring, a considerable portion grew up under the care of the Indian mother, aspired to the honours of the tribe, and were involved in its fate. But also a portion adhered to the fortunes of the white father, shared with him the vicissitudes of border life, and partook of the advantages which gradually gathered round the settled

community. As the border land slowly receded into the farther west, time wrought its gradual change; and long before the little cluster of primitive log-huts had grown up into the city and capital of a state, the traces of Indian blood had been lost sight of. The intermixture, however, had taken place; a certain percentage of Indian blood was there, and that in sufficient amount to exercise some influence in the development of characteristics which already distinguish the Anglo-American from the old insular stock.

But nowhere has the process of intermixture, absorption, and repulsion been carried out on so great a scale as at the Red River Settlement, on the river of that name, which flows into Lake Winnipeg, along with that more recently formed on the Assinaboine river. The former settlement is situated along the banks of the river for about fifty miles, and extends back from the water, according to the terms of the original grant ceded by the Indians, as far as a man can be distinguished from a horse on a clear day. Begun in 1811, under the auspices of Lord Selkirk, and afterwards taken under the protection of the Hudson's Bay Company, the Red River Settlement numbered at the formation of the new province of Manitoba about two thousand whites, chiefly occupied in farming or in the service of the Company. The original settlers were from the Orkney Islands, but they had been subsequently increased by English, Scotch, and French Canadians. There, however, as well as at the remoter forts and trading-posts of the Hudson's Bay Company, the white immigration consisted chiefly of young men; and the result has been, not only the growth of a half-breed population greatly outnumbering the whites, but the formation of a tribe of Half-breeds, who keep themselves distinct in manners, habits, and allegiance, alike from the Indians and the Whites.

This rise of an independent half-breed tribe is one of the most remarkable phenomena connected with the grand ethnological experiment which has been in progress on the

North American continent for the last three centuries. Everywhere, in Spanish, French, English, and Russian America, the mingling of the European and native races has followed the intrusion of the former : but it is only in the extreme northern regions, where the two races have met somewhat on the equality of a common hunter state, that anything equivalent to the first steps towards the evolution of a distinct race becomes apparent. In Russian America, before its cession to the United States, European traders had mingled freely with the natives, until a half-breed population had grown up, and acquired a peculiar recognised status in the country. Mr. Wm. H. Dall, in his "*Alaska and its Resources*," states that the "*Creoles or Half-breeds of Alaska*" number fourteen hundred and twenty-one. In 1842, they were, for the first time, qualified to enter the Greek Church as priests ; and in 1865, the American expedition found Ivan Pavloff, the son of a Russian father and a native woman of Kenai, filling the office of *Bidarshik*, or commander of the post at Nulato. He was legally married to a full-blooded Indian woman, by whom he had a large family. According to the official returns of 1873, the Indian population of the new province of Manitoba and the North-West Territories extending to the confines of Alaska, is estimated at nearly 24,000. Of the settled population, those either half-breed, or more or less of Indian blood, in Red River and the surrounding settlements, numbered, according to returns obtained by me in 1859, about 7200, of whom 6500 were in the Red River Settlement. But since then the organisation of this region into the province of Manitoba has given a special prominence to its half-breed population. According to a census taken in 1871 the total number of Half-breeds was stated as 9770 ; and the Act by which the Government of the new province is constituted, sets apart an extent of 1,400,000 acres for the children of Half-breeds. But further experience proves that their number has been greatly under-estimated. The appropriation of land for the

Half-breeds of Manitoba was an act of simple justice to those autochthones of the new province; and they have promptly availed themselves of their recognised rights. Mr. Provencher, Indian Commissioner, reported to the Minister of the Interior, in 1874, that "many hundreds of Half-breeds were put on the list of Indians since the payment of 1871, and their number has increased each year." In an official letter of the Lieutenant-Governor of the province, of a later date, in reference to the relinquishing of a tract of land of 55,000 square miles, by the Salteaux Indians, the Half-breed families then living with the tribe are informed that they would "be permitted the option of taking either status as Indians or Whites, but that they could not take both."

Here, therefore, is a remarkable ethnical feature in the settlement of the new province of Manitoba which cannot be ignored. It begins its political and social organisation with a half-breed population numbering from 10,000 to 12,000, the offspring of Red and White parentage: a hardy, resolute, independent race, well adapted to the region of which they are, in so peculiar a manner, the native stock. A noticeable difference is observable according to their white paternity. The French half-breeds are more lively and frank in their bearing, but also less prone to settle down to the drudgery of farming, or other routine duties of civilised life, than those chiefly of Scottish descent. But in a border settlement, where the principal trade has been till recently in peltries, the hunter life presents many attractions even for the white colonist; and the half-breeds have been exposed to temptations unknown in older settlements. They are a large and robust race, with greater powers of endurance than any of the native tribes exhibit. With the reserved and unimpressible manner of the Indian, they nevertheless display much vivacity when interested or excited. They retain the coarse, straight, black hair, and the full mouth, as the most persistent features derived from their Indian

maternity; but, even in the first generation, the dark eye has a soft and pleasing aspect compared with that of the pure Indian. As a general rule, the families descended from such mixed parentage are larger than those of white parents; but the results of this are in some degree counteracted by some tendency to consumption among them.

In 1855, it was my good fortune to see an interesting example of different types of the pure and hybrid Indian. At La Point, near the head of Lake Superior, we met with Beshekee, the head chief of the Leech Lake Chippewas, already referred to, a grand specimen of the wild pagan Indian, seamed with the lines of age and the scars of many a forest adventure. He boasted of the scalps he had taken, showed a collar of claws of the grizzly bear, and other trophies won by him in the chase; and spoke, with the unimpressible indifference of a true Indian, of the civilisation of the European intruders, as a thing good enough for the white man, but in which neither he nor his people had any interest. He was accompanied by his son, a debased, dissipated-looking Indian, wrapped in a dirty blanket; and betraying only the degradation of the savage when robbed of the wild virtues of the forest-hunter, without replacing them by anything but the vices of civilisation. The group was completed by a grandson of the old chief, an intelligent, civilised half-breed, who spoke both French and English with fluency, and acted as interpreter during the interview. In this case, however, the grandson was altogether inferior in physical characteristics to the aged forest-bred chief, who was a fine specimen of the Indian, untainted by intercourse with Europeans.

In the Red River settlements where the intermarriage has been invariably between a white husband and an Indian wife, the Indians are chiefly Plain Crees. Some Half-breeds also belong to the Swampies, another branch of the Crees, and to the Blackfeet and Chippewas. But on the Manitoulin Islands, in Lake Huron, a few cases of marriage

between an Indian husband and white wife have occurred. In every case the advantage to the Indian husband has been very marked. The children of such marriages are said to be superior to other half-breeds, but this may be traceable to the moral, rather than to any physical difference in their favour.¹ The greater number of the half-breeds on Lakes Huron and Superior are of French paternity, while their Indian mothers are chiefly Chippewa or Ottawa; and the few examples of Indian paternity belong to the same tribes.

But the civilised half-breed population of the Red River settlements occupies a peculiar position, and must not be confounded either with the remarkable tribe of Half-breeds, or with Indians of mixed blood in the villages on their reserves. Remote as that settlement has hitherto been from other centres of colonisation; and tending, from its peculiar circumstances, rather to attract the Canadian voyageur, or the young adventurer, than the married settler, the inevitable tendency has been towards intermarriage, and the growth of a mixed population. Much property is now accordingly possessed by those of mixed blood. Their young men have, in some cases, been sent to the Colleges of Canada, and, after creditably distinguishing themselves there, have returned to bear their part in advancing the progress of the settlement. The result of this is already apparent in an increasing refinement, and a growing desire for the removal of every trace of their relation to the wild Indian tribes, or to the Half-breeds who rival these in the arts of savage life. Professor Hind remarks, in his "Report on the Exploration of the Country between Lake Superior and the Red River Settlement,"—"The term *native*, distinguishing the half-breeds from the European and Canadian element, on the one hand, and the Indian on the other, appears to be desired by many of the better class,

¹ Answers to Queries, by Rev. Dr. O'Meara, long resident missionary among the Indians of the Manitoulin Islands.

who naturally look upon the term Half-breed as, applied to a race of Christian men, scarcely appropriate."¹

The venerable Archdeacon Hunter, of Red River, in his replies to queries, with which he has favoured me, says,—in answer to the inquiry, "In what respects do the half-breed Indians differ from the pure Indians as to habits of life, courage, strength, increase of numbers, etc.?"—"They are superior in every respect, both mentally and physically." Again, when asked to "state any facts tending to prove or disprove that the offspring descended from mixed white and Indian blood fails in a few generations," the Archdeacon gives this decided reply, as the result of experience acquired by long residence and intimate intercourse among them as a clergyman of the Roman Catholic Church:—"It does not fail, but, generally speaking, by intermarriages it becomes very difficult to determine whether they are pure whites or half-breeds." Mr. S. J. Dawson, of the Red River Exploring Expedition, also describes the half-breeds as a hardy and vigorous race of men, and frequently with large and healthy families. "I know," he writes, "from my own observation, that the French half-breeds at Red River are a gigantic race as compared with the French Canadians of Lower Canada."

The Half-breed buffalo-hunters are not to be regarded as at all approximating to the nomad Indians. They belong to the settlement, possess land, and cultivate farms; though their agricultural operations have hitherto been such as might be expected, where the inducements to a wandering life are little less than among the pure-breed Indians, who abandon such work to their squaws. They are, however, distinct from members of the settled community of mixed blood, who have shared in the domestic training and culture of their white fathers, and adopted European habits. The hunters are divided into two bands, known by their separate hunting-grounds. Of those, the

¹ *Report*, 1848, p. 305.

White Horse Plain Half-breeds furnished the following returns, according to a census taken in 1849, near the Strayenne River, Dacotah territory:—"Six hundred and three carts, seven hundred Half-breeds, two hundred Indians, six hundred horses, two hundred oxen, four hundred dogs, and one cat." Mr. George Mercer Dawson, the geologist of the British North American Boundary Commission, came upon the "Big Camp" of the Half-breed hunters, in 1874, to the west of White Mud River.¹ In July of that year the Big Camp consisted of upwards of two hundred tepees, or buffalo-skin tents, and about 2000 horses, valued according to their aptitude in buffalo-running. But Mr. Dawson arrives at the conclusion that, at the present rate of extermination, twelve or fourteen years will suffice for the destruction of all that now remains of the great northern band of buffalo, and the termination of the trade in robes and pemmican, throughout the whole region north of the Missouri River. With the extirpation of the buffalo the wild Indian tribes dependent on them must retreat to other hunting-grounds; while the Half-breed hunters will return to the settlement, and cast in their lot with the other members of the new province of Manitoba. According to Mr. Paul Kane, who joined their buffalo-hunt in the summer of 1845, the half-breed hunters of Red River then numbered altogether 6000, and more recent returns indicate a progressive increase.

Few subjects of greater interest to the ethnologist can be conceived of than this origination of a numerous and independent tribe of Half-breeds, partaking of characteristics derived alike from their white fathers and their Indian mothers. They are a vigorous race of men, capable of enduring the greatest hardships. They adhere to the Roman Catholic faith; and occasionally a priest accompanies them

¹ "Report of the Geology and Resources of the Region in vicinity of 49th Parallel, from the Lake of the Woods to the Rocky Mountains." By George Mercer Dawson, F.G.S.

on their hunting expeditions, in which case mass is celebrated on the prairie. They are at open feud with the Blackfeet and other Indian tribes, and carry on their warfare much after the fashion of the Indian tribes that have acquired fire-arms and horses ; but they give proof of their "Christian" civilisation by taking no scalp-trophies from the battle-field. From about the 15th of June to the end of August, they are abroad on the prairie engaged in their summer hunt. A subsequent autumnal buffalo-hunt engages a smaller portion of their number ; and then such as do not depend on winter hunting, and the profits of trapping the fur-bearing animals, return to the settlement. It is complained that they make poor farmers, neglecting their land for the exciting pleasures of the chase. But this is inevitable, where the produce of their buffalo hunts have hitherto supplied the chief means of carrying on a profitable trade with the Hudson's Bay Company's agents and American traders from St. Paul's. The distant hunt not only consumes the time required for agricultural labour, but it begets habits altogether incompatible with settled industry ; and would produce the very same results on an body of white settlers as on this remarkable native population. But in the field, whether preparing for hunting or war, the superiority of the Half-breeds is strikingly manifested. They then display a discipline, courage and self-control, of which the wild Sioux or Blackfeet are altogether incapable ; and they accordingly look with undisguised contempt on their Indian foes.

The organisation displayed in their hunting expeditions shows a remarkable aptitude for self-government. When fairly started on the hunt, a general council is held, which proceeds to elect a president or leader. A number of captains are then nominated jointly by the leader and council, and each of these appoints a certain number of constables or deputy-officers, whose duty it is to see that the laws of the hunt are carried out, and that the nightly encampment

is made with strict attention to the general safety. Guides are also chosen by popular election, who carry flags as their badge of office, and control all arrangements for the camping. The hunt being thus organised, all who have joined it are under military law. No hunter can return home without permission; no gun may be fired when the buffalo country is reached, until the leader has given the word which lets loose the wild array of hunters on the bewildered herd. The captains and their deputies also superintend the nightly arrangement of the carts in a circle, within which the horses and cattle are picketed; and in case of property being missed, they can prohibit any member of the hunt from stirring till it is found. Every breach of camp-laws is atoned for by fines. A man who passes the camp-guide of the day, while on duty, subjects himself to a fine of a dollar; and he who ventures to run a buffalo before the leader has given the signal for the hunt to begin, has to forfeit a penalty of twenty shillings.

Such are the most noticeable characteristics of this singularly interesting race, called into being by the contact of the European with the native tribes of the prairie and forest. With so much of the civilisation which no pure Indian tribe has derived from intercourse with white men, and such admirable organisation and prompt recognition of the obligations of law and order, there seems good reason for believing in their capacity for all the higher duties of a settled, industrious community. They already know the value of money; nor are they unused to the labours of agriculture, though hitherto this has offered no profits to tempt them to the raising of grain or stock-farming on any adequate scale. In the condition of the settlement, with its unhealthful element of fur-trading posts, buffalo prairies, and nearly inaccessible markets for farming produce, the Half-breeds have been retained till recently in that dangerous transitional stage from which all attempts at civilising the Indian tribes have derived the chief sources of

failure. But a new era has begun ; the great North-West is being opened up for industrious settlement ; and with the influx of European colonists it will be seen how far this singular race of mixed blood is able to withstand the influences attendant on the transition from such a hunter state to the settled life of the farmer and trader. No race has ever offered stronger claims on the attention of the philanthropist and the statesman ; and could it have been retained in permanent isolation, few could have presented a subject of greater interest to the man of science. But under existing circumstances the Half-breeds of Manitoba cannot permanently remain as a distinct race. Already the settlers of mixed blood intermarry freely with the white population, and share with perfect equality in all the rights and privileges of the community. As emigration increases the same results will follow there as have already happened in all the older settlements, from the New England shores, or the St. Lawrence Gulf, westward to the remotest clearings of young civilisation. The last traces of the red blood will disappear, not by extinction, but by the absorption of the half-breed minority into the new generations of the predominant race. Yet, along with all the changes wrought by climate, institutions, and habits, on the people thus destined to be the inheritors and occupants of the deserted Indian hunting-grounds in the Western Hemisphere, this element will exercise some influence, and help to make them diverse from their European ancestry.

But there is another aspect in the history of the American Indian tribes, in which their extinction is seen to be wrought out by means which we can estimate with very different feelings from those with which we witness their extermination by mere contact with the white settler, or their extirpation by the combined action of his violence and criminal cupidity. The condition of the American tribes and nations to the north of the Mexican centre of a native civilisation may be described at the period of European discovery as one

of unstable equilibrium. The influence of one or two dominant tribes is traceable from the St. Lawrence to the Gulf of Mexico; and the rival nations were exposed to such constant and aimless exterminating warfare, that it is more than doubtful if the natural increase of population was equal to the waste of war. We are accustomed to regard the Western Hemisphere as the natural habitat of its aboriginal children: wherein, as in a world apart, they grew and multiplied, in the enjoyment of all that their simple natures were capable of, until the intrusion of the white man brought misery and desolation into their midst; and that exterminating process was begun which threatens ere many more generations pass away, to leave only their grave-mounds to tell of the past existence of the Red Man in the New World. A brief glance at some of the incidents in the history of extinct tribes, will tend to modify this opinion.

The early notices of the first explorers, and traditions since gathered from surviving nations, tell of many that have utterly passed away, without the malign intervention of European influence. "But language adheres to the soil when the lips which spoke it are resolved into dust. Mountains repeat, and rivers murmur the voices of nations denationalised or extirpated in their own land."¹ By such vestiges extinct nations assert their claims to an inheritance of the past, throughout all the ancient world; and the same evidence tells of former occupants of the New World. The great mountain chain of the Alleghanies, constitutes in this manner the enduring monument of the oldest tribe of the United States of which there is a distinct tradition. The beautiful valleys of the Ohio and its tributaries once teemed with the warriors, and were enlivened by the populous towns and villages of this ancient people. The traditions of the Delawares told that the Alleghans were a strong and mighty nation, reaching to the eastern shores of the Mississippi, when in remote times they came into the Great

¹ Falgrave's *Normandy*, vol. i. p. 700.

Valley from the west. But the Iroquois, who had established themselves on the head waters of the chief rivers which have their rise immediately to the south of the great lakes, combined with the Delawares or Lenapé nation to crush the power of that ancient people; and the surviving remnant of the decimated Alleghans was driven down the Mississippi, and their name blotted out from the roll of nations. The very name of the Ohio is of Iroquois origin, and was given to the river of the Alleghans by their ruthless conquerors. The Susquehannocks, who are believed to have been of the same ancient lineage, excited the ire of the Iroquois, and were in like manner extirpated; at a later date the Delawares fell under their ban, and the remnant of that proud nation quitting for ever the shores of the noble river which perpetuates their name, retraced their steps into the unknown West. So, in like manner, the Shawnees, Nanticokes, Unamis, Minsi, and Illinois, were vanquished, reduced to the condition of dependent nations, or driven out and exterminated. Settlements of the conquerors were frequently established in the conquered lands; and the only redeeming feature in this savage warfare was their system of absorption, by adopting prisoners rescued from death, and admitting them into the tribes of the conquering nation.

All this was the work of the Indian. As the curtain rises on the aboriginal nations of the forest and the prairie, we find them engaged in this exterminating warfare; and a glance on the map of subsequent centuries, or a reconstruction of the traditionary history of the oldest tribes, tells the same tale of aimless strife, expatriation, and extinction. The history of the nations found in occupation of a wide range of country on the northern and southern shores of the great lakes, including the whole of Upper Canada and Western New York, will most clearly suffice to illustrate this phase of savage life. When Cartier first explored the St. Lawrence, in 1535, he found large Indian

settlements at Quebec and on the Island of Montreal, where Champlain, little more than half a century after, met with few or none to oppose his settlement. We can only surmise who the Indians at the period of Cartier's arrival were ; but it is most probable that they belonged to the same Wyandot stock, who were then withdrawing into the western parts of Upper Canada to escape the fury of the Iroquois, after they had nearly desolated the Island of Montreal. At the era of Champlain's visit, and throughout the entire period of French occupation, the country to the south of the St. Lawrence, and along the whole southern shores of Lake Ontario, was occupied by nations of the Iroquois confederacy, whose uncompromising hostility to the French materially contributed to confine their colonies to the limits of Lower Canada. The country immediately to the westward of the river Ottawa, and along the northern shore of Lake Ontario, was found unoccupied when first explored by Champlain ; but it was marked with abundant traces of cultivation, and of recent occupation by tribes who had retreated westward from the violence of the Iroquois. The region to the north of the Wyandot or Huron territory, and the islands and northern shores of Lake Huron, were in the occupation of the Mississagas, the Ottawas, the Nipissings, and other Algonquin nations, who, though belonging to a distinct stock, are repeatedly found in alliance with the Hurons against their common Iroquois foe, and to some extent shared their fate. The Hurons, on the contrary, and all the nations lying between them and the Iroquois country, appear to have belonged to the same stock with the confederate nations by whom they were pursued with such uncompromising hostility, till their once populous regions were abandoned to the wild beasts of the forest.

At the period when the Huron tribes became special objects of missionary zeal by the Jesuit Fathers, in the seventeenth century, they were established along the great

bay, once populous on all its shores with that people whose name alone survives in the Lake of the Hurons. The region lying around Lake Simcoe, and Georgian Bay, is marked on every favourable site with the traces of their agricultural industry, and crowded with their graves. They presented some traits of superiority to the nations of the Algonquin stock; and equalled in fierce daring, and all the wild virtues of the savage warrior, the Iroquois, by whom they were unrelentingly exterminated. Father Sagard estimated the population of the limited region occupied by the four Huron tribes at the close of their national history, at between thirty and forty thousand souls. But to the south-west lay the villages of the Tiontonones, or Petuns, another nation of the same stock, also a populous and industrious agricultural community; and beyond this, in the territory embracing the beautiful valley and the great falls of the Niagara River, where are now the sites of the finest orchards of Canada, and some of the most fruitful counties of the State of New York, a nation belonging to the same Huron-Iroquois family was found by the first French missionary explorers, in 1626. By the Hurons they were designated the Attiwendaronk, expressive of a mere dialectic difference between the languages of the two;¹ but from the French they received the name of the Neutral Nation, from the friendly relations they maintained with both parties during the great struggle between the Iroquois and the allied Huron and Algonquin nations. At the close of their history their population was estimated at twelve thousand souls; but a position of neutrality between hostile rivals was rendered all the more difficult by the ties of consanguinity: though this appears to have been also shared by the Eries who occupied the broad-fertile regions along the southern shores of the great lake which bears their name.

¹ By this name, according to Breboul, the Hurons signified that they were a "people of a language a little different." They applied that of Akwasake as the general name of nations speaking languages unintelligible to them.

The fate of the Attiwendaronks and the Eries is certain, but the history of both is obscure, for they lay beyond the reach of the French traders and missionaries. In the earlier half of the seventeenth century the Jesuit Fathers planted their stations throughout the Huron country, amid populous walled villages and cultivated fields, and reckoned the warriors of the tribes by thousands. In 1626, Father Joseph de la Roche d'Allyon penetrated into the country of the Neutral Nation, and sought to discover the Niagara at its junction with Lake Ontario. After a journey of five days through the unbroken forest which lay between the Tiontonones and the Attiwendaronks, he reached the first settlement of the latter, and passed through six towns before arriving at that of the chief Sachem. Twenty-two other towns and villages were embraced within his jurisdiction; and tobacco was largely cultivated, along with maize and beans. The country of the Eries was more extensive, and probably not less populous. But within less than thirty years from this mission of Father de la Roche, the whole region occupied by those nations, from the Georgian Bay to the southern limits of the Eries, far beyond the shores of the lake which perpetuates their name, was a silent desert. Tradition points to the kindling of the council-fire of peace among the former nation, before the organisation of the Iroquois confederacy; and to the artistic skill of the Eries are ascribed several interesting remains of aboriginal art, among which a pictorial inscription on Cunningham's Island in Lake Erie is described as by far the most elaborate and well-sculptured work of its class hitherto found on the continent.¹ But they perished by the violence of kindred nations before the French or English could establish intercourse with either. In the French maps of the middle of the seventeenth century the very existence of Lake Erie is unknown; and the first of the Jesuit missionaries had scarcely penetrated to its shores, when the ancient

¹ *History of the Indian Tribes*, vol. ii. p. 78, plates xli. xlii.

nation whose name it preserves was swept away. Within a year or two of their destruction the Neutral Nation experienced the same fate at the hands of the Mohawks under the leadership of Shorikowani, a famous chief of that nation; and the Attiwendaronks utterly disappeared from the Valley of Niagara. Charlevoix assigns the year 1655 as the date of their extermination. Their council-fire was extinguished; their name was blotted out; and the few survivors were subsequently found by one of the French missionaries living in degrading serfdom in the villages of their conquerors.

All this was the result of conflict among native tribes, and so entirely uninfluenced by the white man that it is with difficulty we can recover some trustworthy glimpses of the Eries or the Neuters from the notes of one or two missionaries, whose zeal for the propagation of the faith carried them into the country of those extinct nations, long before the enterprise of the *coureurs des bois* had led them to penetrate so far. It reveals to us glimpses of what had been transpiring in unrecorded centuries throughout the vast forests and prairies of the American continent; and may help to reconcile us to the fate of the Iroquois by whom such widespread desolation was wrought. Their remarkable confederacy was broken up by the adherence of the Mohawks to the British side, when the colonists rose in arms against the mother country. The beautiful Mohawk Valley, which was once their home, is now crowded with towns and villages, and interlaced by railways and canals; but the remnant of the once powerful Mohawk tribe, with a small band of the Senecas, amounting together to about seventeen hundred souls, have found a home in the country which they depopulated two centuries before. "I have been told," says Colden, "by old men in New England, who remembered the time when the Mohawks made war on their Indians, that as soon as a single Mohawk was discovered in their country, their Indians raised a cry from

hill to hill, A Mohawk! A Mohawk! upon which they fled like sheep before wolves, without attempting to make the least resistance." The traditional terror of their name still survives, though they have been peaceably settled for generations on Canadian reserves granted by the British Government to them, along with other loyalist refugees from the revolted colonies. The cry of a Mohawk still fills with dread the lodges of the Algonquin Indians; and they have been repeatedly known to desert their villages on Couchiching, Chemong, and Rice Lakes, and to camp out on islands in the lakes, from the mere rumour of a Mohawk having been seen in the vicinity.

The pure-blood Mohawks still exhibit traces of the superiority which once pertained to all the members of the Iroquois league; and similar traits are discernible in other survivors of the confederate nations. The Onondagas, who claimed to be true autochthones, alone of all the Six Nations retain a hold on their native spot of earth, and still dwell in the beautiful and secluded valley of Onondaga, with sufficient territory for the maintenance of the surviving remnant. But Mohawks and Onondagas alike betray, in the assemblies of the tribes, many traces of mixed blood, as well as of diminished numbers, and the same fact is manifest in the representatives of the other nations. Of the Oneidas, a portion lingers on their ancient site, but the main body of the survivors are scattered: one band in Canada, and another and larger one in Wisconsin. The Senecas and Tuscaroras have their few living representatives near the Niagara river, on a portion of the land which their forefathers wrested from the Eries; and even the Cayugas, the least fortunate among those unfortunate inheritors of a great name, have found shelter for a little handful of their survivors on the Seneca reserves in western New York.

Such is the history of the aboriginal population which, in the seventeenth century, occupied the valley of the St.

Lawrence, and stretched away on either bank and along the shores of the great lakes westward to Lake Huron and St. Clair. La Hontan estimated the Iroquois, when first known to Europeans, at seventy thousand ; at the present time their numbers in Canada and the States do not altogether exceed seven thousand. They have passed the most critical stage in the collision between savage and civilised man ; and, settled on their little farms remote from the populous centres of trade, they are improving both socially and morally. Nevertheless, so long as they are kept apart in detached communities in a state of pupillage, and forced into constant intermarriage, their fate is inevitable. Better far would it be for them to accept the destiny of the civilised half-breed, and mingle on equal terms with settlers many of whom have yielded up a nationality not less proud than theirs, and forsaken the homes and the graves of their fathers to share the fortunes of the New World's heirs. It is as impossible for the civilised Indian to live in a community, yet not of it, as for any other of the nationalities whose members merge into the people with whom their lot is cast. By such a process the last visible remnants of the famous Iroquois league would indeed disappear, absorbed, like all other foreign nationalities, into the new leagues which growing empires are forming in the West. But each survivor of the old Indian confederacy would be the gainer by the abandonment of what is worse than an empty name ; while the Euromerican race would take once more into its veins the red blood of the ancient aristocracy of the forest.

The second volume of the *Archæologia Americana* contains a synopsis prepared by Gallatin, of the Indian tribes of the continent to the east of the Rocky Mountains, and of those in the British and Russian possessions in North America, which may be said to constitute the true basis of native American ethnology. Its value has been fully admitted by subsequent writers. To him we owe the determination of elements of philological affinity by which to

classify the great families or stocks of the Algonquin-Lenapé and the Iroquois, occupying at one time the whole region to the east of the Mississippi, from the fifty-second to the thirty-sixth degree of north latitude. But to the south of this lies a country in which Gallatin recognised the existence of at least three essentially distinct languages of extensive use : the Catawba, the Cherokee, and that which he assumed to include in a common origin, both the Muskogee and the Choctaw. But besides those, six well-ascertained languages of smaller tribes, including those of the Uchees and the Natchez, appear to demand separate recognition. Their region differs essentially from those over which the Algonquin and Iroquois war-parties ranged at will. It is broken up by broad river-channels, and intersected by impenetrable swamps ; and has thus afforded refuge for the remnants of conquered tribes, and for the preservation of distinct languages among small bands of refugees.

The Cherokees were the first settlers, as a comparatively civilised agricultural nation, under very peculiar circumstances. In their predatory inroads they carried off slaves from Carolina ; and speedily recognising the advantages derived from enforced service, they settled down in the remarkable condition of a civilised nation of Red Indian slaveholders. In 1825, their number amounted to 13,783, and they held 1277 slaves of African descent. But the fact that at the same time they possessed 2923 ploughs, suffices to prove that agricultural labour was carried on to a great extent by other than the slave population. Meanwhile admixture of white blood has largely affected the dominant race. The true test of equality of races is when the civilised Indian marries a white woman, and this has already taken place to some extent among the Cherokees. The census of 1825 included, among the numbers of that nation, sixty-eight Cherokee men married to white women, and one hundred and forty-seven white men married to Cherokee women. This alone, exclusive of all previous hybrid ele-

ments, must rapidly tend to efface the predominant characteristics of Indian blood. When the census was taken in 1852, the Cherokees numbered 17,530; and the commissioner remarked in reference to their growing numbers: "A visible increase is discernible, especially among the half-breeds." But they view with extreme jealousy the inquisitorial visits of the statist, and yield all such information very reluctantly, so that later returns do not admit of comparison with the older census.

Among the chief results of the great civil war between the Northern and Southern States has been the abolition of slavery. But in so far as the employment of the African race as slaves may be regarded as an evidence of the civilisation of the Red Indian, it was by no means confined to the Cherokees. In an appeal on behalf of the Confederate States, dated Richmond, Dec. 26th, 1862, addressed to the Choctaws, Chickasaws, Creeks, Seminoles, and other friendly Indian nations, it is urged that "could the North subjugate the Confederate States and deprive them of their slaves, it would not be long in taking yours from you also." Mr. Lewis H. Morgan writes me thus: "I have visited all the emigrant Indian nations in Kansas and Nebraska, with two or three exceptions. I saw instances among the Shawnees and Delawares, and the Wyandots in Kansas, where white men who had married half-breed Indian women were living genteelly among them, and had slaves to cultivate their land; and also instances where half-breed Indians had married white wives and lived in good style." Unhappily the revolutionists of the Southern States involved the Indians in their struggle for independence; with disastrous results to many of them. Nevertheless some of their diplomatic negotiations serve to show the advancement they had achieved. The *Texan News* of April 27, 1861, reports the contents of a letter from the Indian Nations giving assurances of the friendly reception of commissioners of the State Convention by the Choctaws, Chickasaws, Cherokees, Semi-

noles, and Creeks. "All the tribes," it added, "are to hold a general council on the 8th of May. These tribes are slaveholders, and are for secession and the Southern Confederacy. The Chickasaws wished to secede at once; but the Cherokees desire to wait the return of a delegation they have sent to Washington to see about their funds held in trust by the United States Treasury." But the editor of the *Kansas News* adds, in proof of the soundness of the worldly-wise Cherokees, notwithstanding their prudent desire to ascertain the safety of their funds before committing themselves to secession: "The Cherokees have cleared out the abolition emissaries among them. Parson Jones, the secretary of Ross their chief, and an abolition agent, has been in danger of his life. He will have to leave the country." Subsequent Reports on Indian affairs place the defection of the Cherokees, Chickasaws, and Choctaws beyond doubt; but civil war could beget nothing but evil results for them; and in the third year of the war they are represented as divided in council, reduced in numbers, their lands wasted by fire and sword, and a miserable remnant of 8000 "loyal Cherokees" dependent for subsistence on the Indian department. This was the inevitable result of their becoming involved in such a conflict; but even amid this ruin of the most progressive native civilisation, we may unhesitatingly accept the revolutionary convention of the Chickasaws, Choctaws, and other slave-holding tribes; and the summary clearing out of Parson Jones and the abolitionists by the more cautious Cherokees: as evidence that the southern Indian nations were not greatly behind their white neighbours in the march of civilisation.

Mr. Lewis H. Morgan, who has devoted much attention to the condition of the Indian tribes, and has enjoyed many opportunities of personal observation, thus writes to me in reply to queries relative to the amount of mixed blood traceable among the Indians of the United States: "I doubt whether there is any statistical information upon the

subject in the possession of the Government. I know or none. Actual observation would throw some light upon the question; but even this would be met with the difficulty that some of our native races of pure blood are darker than others. The Kaws of Kansas are unmixed. They are also prairie Indians, and very dark-skinned, nearly as much so as the negro. The Sauks or Foxes are adulterated somewhat, yet I have seen some of them as dark as the Kaws. The Pawnees of the Upper Missouri are also prairie Indians, and the pure-bloods are nearly as dark-skinned as the Kaws. I have seen their bare backs many times, and examined their skin closely. It is slightly mottled, with a bronze colour, and is a truly splendid skin. On the other hand the Sioux, or Dacotahs, are much lighter. So are the Chippewas and Potowatomies when pure. But all of these have taken up white blood in past generations, and the rapidity of its dissemination after a few generations needs no proof. I think they have taken up enough, through the traders and frontier men, since 1700, to lighten their colour from one-sixth to one-fourth. The pure-blood Iroquois are light. I have seen them nude to the waist in the dance very many times. Their skin is splendid, of a rich coffee and cream colour. But it must be remembered that all of these are forest tribes except the Dacotahs, and even they have been forced back on the prairies, from Lake Superior and the east side of the Mississippi, since the period of colonisation. Indians of the same stock grow much darker on the prairie if far south. I tried, when in Nebraska, to ascertain the number of half-breeds and quarter-breeds around our forts in the Indian territory. The number is large, but I could gain no satisfactory information." The observations thus noted have a very comprehensive bearing on the general question of hybridity; for so far from implying any tendency to deterioration or extinction as the result of an intermixture of the white and red races, they point to such admixture of blood already affecting whole

tribes still roaming the forests and the prairies. So much, indeed, is this the case that the term "pure-breed" is perhaps only partially applicable to any of them, and it may even be a question how far the physical form, as in the features and the shape of the head, have escaped modification by such influences.

Through the aid of officers of the Indian Department of Canada I have obtained statistical information of a more definite kind relative to some at least of the settled tribes. In Quebec and the maritime provinces there are upwards of seven thousand five hundred Indians of various tribes, settled on lands secured to them by the Government of the Dominion, or otherwise brought more or less under the same influences as the white settlers around them. But in some of those bands not a single pure-blood Indian remains. They have all abandoned paganism, and the greater number adhere to the Roman Catholic Church; but their condition varies considerably in different localities. The Iroquois of St. Regis are specially noticeable as having blended some of the healthful elements of European civilisation with the self-reliance and vigour which once rendered them the most formidable enemies of the colonists of Louis XIV. They are now conspicuous among native tribes for their temperate and orderly lives, and the great progress they have made as a settled community. They raise wheat, oats, Indian corn, potatoes, and other agricultural products, to a considerable extent; and when the last census was taken, they possessed 126 cows, 17 oxen, 114 horses, and 250 swine. A considerable number of them are of mixed blood, but they still manifest a predilection for employments more in accordance with the hereditary instincts of forest life. The able-bodied men reluctantly expend the summer months on their farms. They prefer entering on engagements as raftsmen and pilots for the river, or engaging in the service of the Hudson's Bay Company. They appear, however, to have acquired provident habits, along with other virtues of

civilisation ; and their numbers have increased more rapidly than any other tribe in Canada of late years, notwithstanding a severe mortality in 1832, when 336 persons died of cholera.

In their industrious and provident habits, the Iroquois of St. Regis present a striking contrast to other tribes, such as the Abenakis of Beçancour, whose whole live stock in 1857 consisted of a single horse. The band of Abenakis settled on the river St. Francis, has, however, attained to a higher condition ; though some of the evidences of progress are not productive of the most beneficial results. Their further improvement is reported to have been greatly retarded by divisions and jealousies consequent on the adoption of the Protestant faith by a portion of the tribe, while the remainder hold fast to that of the Roman Catholic Church. They include among their numbers descendants of the once famous Mohegans, and their warlike allies, the Sokokis ; but the report of 1858 states that there was not then a single pure-blood Indian surviving. The Rev. J. Marault, Roman Catholic missionary at St. Francis, remarks : " Our Indians are, with but very few exceptions, *Métis*, or half-breeds. Here, I do not know one Abenakis of pure blood. They are nearly all Canadian, German, English, or Scotch half-breeds. The greater part of them are as white as the Canadians, and the dark complexions we see with many are owing, in most cases, to their long voyages, exposed, as they frequently are, for two and three months at a time, to the burning rays of the sun. Many suppose that our Indians are intellectually weak and disqualified for business. This is a great mistake. Certainly, so far as the Abenakis are concerned, they are nearly all keen, subtle, and very intelligent. Let them obtain complete freedom, and this impression will soon disappear. Intercourse with the whites will develop their talents for commerce. No doubt some of them would make an improper use of their liberty, but they would be but few in number. Everywhere, and

in all countries, men are to be found weak, purposeless, and unwilling to understand their own interests; but I can certify that the Abenakis generally are superior in intelligence to the Canadians. I have remarked, that nearly all those who have left their native village to go and live elsewhere free, have profited by the change. I know of several who have bought farms in our neighbourhood, and are now living in comfort. Others have emigrated to the United States, where they have almost all prospered, and where several of them have raised themselves to honourable positions. I know one who is practising with success the profession of a doctor. Others have settled in our towns with a view to learn the different trades. There is one at Montreal who is an excellent carpenter; but here we see nothing of the kind. Nevertheless, I observe a large number of young men, clever, intelligent, and gifted with remarkable talents." This experienced observer accordingly urges the emancipation of all at least of the more civilised Indians, from the condition of minors in the eye of the law; feeling assured that if they were placed in competition with the whites, and allowed to hold and dispose of their property, they would be found fully able to maintain their place in the community.

This is remarkable testimony, alike in reference to the intelligence and the enduring vigour of a tribe already so largely affected by intermixture with the whites. But the changes wrought on the descendants of the Hurons, whom the Jesuit missionaries of the seventeenth century guided from their ravaged hunting-grounds around the Georgian Bay to their later settlements on the banks of the river St. Charles, have still more completely effaced all aboriginal traces. The author's disappointment was great on first visiting the village of La Jeune Lorette for the purpose of seeing the remnant of the warlike Hurons. Their nominal existence there is indeed chiefly due to the hereditary claims which they maintain to their share in the annual

division of certain Indian funds. The Commissioners refer to them as a band of Indians "the most advanced in civilisation in the whole of Canada;" but the interest which this is calculated to awaken is diminished by the admission in the same report, that since the migration of this band of the Huron tribe from their ancient territory in Upper Canada "they have, by the intermixture of white blood, so far lost the original purity of race as scarcely to be considered as Indians." They are, moreover, the only people of Indian descent in Canada who have lost nearly all traces of their native language. They speak a French *patois*; and, but for the care of their spiritual guardians, and the pecuniary inducements of the annual Indian grant, they would long since have intermingled and disappeared among the habitants of pure French descent, by whom they are surrounded. Here, then, is an example of the admixture of blood protracted through a period of upwards of two centuries. But so far from this practical experiment of the influence of hybridity furnishing any proof of infertility and inevitable extermination as its result, the Hurons of Lorette were found to have considerably increased in number in the interval of twenty years subsequent to the Indian census of 1844; and, after a reduction in numbers at a later date, mainly ascribed to the withdrawal of some of the more energetic young men; they are again reported, in the census of 1873, as on the increase. There thus seems every likelihood that the Hurons may survive until, as a settlement of French-speaking Canadians on the banks of the St. Charles, they will have to prove by baptismal register, or genealogical records of the tribe, their Indian descent, after all external traces have disappeared.

The Micmacs of Restigouche, numbering less than five hundred in all, are a small though highly civilised band of the Micmac nation, detached from the main stock, owing to the intersection of their lands by the boundaries of the British provinces. Bands of the same Indian nation occupy

various reserves in New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland ; but the larger number of them are of mixed blood. I have in my possession a photograph, obtained by Mr. S. T. Rand, missionary to the Indians of Nova Scotia, of a full-blood Micmac, selected by him as the only Indian within his mission whom he could produce as an undoubted representative of the pure native race. Small encampments of them may be met with along the shores of the lower St. Lawrence, industriously engaged in the manufacture of staves, barrel-hoops, axe-handles, and baskets of various kinds. They generally speak English, and manifest unusual shrewdness and sagacity in making a bargain. Attracted on one occasion by a picturesque group of birch-bark wigwams on the southern shore of the St. Lawrence, below the Isle of Orleans, I landed for the purpose of sketching ; and, entering into conversation with the group of Micmac Indians, I was amused to find myself presently involved in a discussion as to the price of staves and hoops, the fluctuations of the market, and the hard bargains driven with them by the traders of Quebec : all conducted with an acuteness that might have done credit to a disciple of Adam Smith or Ricardo. Nevertheless, when at parting I ventured on the improper liberty, according to Indian ideas, of asking the name of the leader of the party with whom the conversation had been chiefly carried on, all his prejudices reappeared. He was once more the native of the wigwam ; and I was given plainly to understand that I had encroached on the courtesies of friendly intercourse, and attempted to take advantage of him. A small purchase sufficed, however, to restore amity between us. He appeared to be a full-blood Indian. His figure was muscular and well-proportioned, and his skin presented the strongly-marked red colour noticeable in pure-blood Micmacs.

Such is the condition of the Indians occupying lands in Eastern Canada. But besides those enumerated, various

unsettled tribes roam about on the lower St. Lawrence, small bands of which, including a considerable number of half-breeds, have settled at different stations, and been partially brought under the influence of civilisation, chiefly by the Roman Catholic missionaries. The greater number, however, are wild forest and hunter tribes, of whom some knowledge was formerly gained at the annual gatherings for distribution of presents; but since that practice was abandoned, they rarely come within the range of any civilised observers, excepting those connected with the Hudson's Bay Company. Different tracts of land have been set apart for the Montagnars, on the Peribonka river, on the Metabetchouan, near the Lake St. John, and on the St. Lawrence, from the River de Vases to the Des Outardes. But a large proportion of the Montagnars are still nomadic, and are even found in deadly hostility to the Esquimaux on the shores of James Bay. Of the wild tribes lying to the north and east of the Lower Canadian clearings, comparatively little is known. Among those may be classed the Têtes de Boule, the Algonquins of Three Rivers, and the Nipissings, Algonquins, and Ottawas, who wander uncontrolled near the head-waters of the Ottawa river. The Mistassins and Naskapees, on the lower St. Lawrence, are mostly in the same nomad condition. The latter belong to the Montagnars stock, and have been estimated at 2500, of whom fully 1500 are still wild pagans. They worship the sun and moon, or Manitous who are supposed to have their abode there. They devote to both of these deities parts of every animal slain, and annually offer up the sacrifice of the white dog. In their mythology and superstitious rites, the wild Naskapees reveal traces of the same Sabian worship which, under many varying and degraded forms, constitutes a link seeming to connect the savage tribes of North America with ancient centres of civilisation in Mexico and Peru.

It is not a little strange to find such pagan rites perpetuated among nomads still wandering around the outskirts

of settlements occupied by the descendants of colonists, who, upwards of three centuries ago, transplanted to the shores of the St. Lawrence the arts and laws of the most civilised nation of Europe. The regions thus occupied by savage tribes are annually coasted by richly-laden merchant fleets of Britain; and the ocean steamers have now brought within a few days' sail of Europe those outcast descendants of the aboriginal owners of the soil. But they experience no benefit from the change. The Mistassins and Naskapees exhibit all the characteristics, and some of the most forbidding traits, of the Indian savage. They are clothed in furs and deer-skins, their only weapons are the bow and arrow, and they depend wholly on the bow and drill for procuring fire.

Yet the wild tribes are unquestionably better off than some who wander in a partially civilised condition on lands allotted to them on the lower St. Lawrence. Of the Montagnars, the Indian Commissioners remark in their report of 1858: "Where uncorrupted by intercourse with unprincipled traders, they were remarkable for their honesty; and even now it is but very seldom that they break their word, or wilfully violate engagements which they have entered into. There are but few half-breeds among them. They are diminishing rapidly, upwards of three hundred having died within ten years, one-half of whom have fallen victims to starvation." Fever and small-pox have from time to time committed terrible ravages among them; but more fatal though less noted effects result from the destruction of their game, and the great injury to their fisheries, effected by the lumberers and white settlers. Tales of cannibalism are whispered; and I have been told of instances brought under the notice of missionaries in the lower province, in which they entertained no doubt that, in the privations incident to the long and severe winters of that region, the wretched natives have only escaped starvation by the most frightful means to which imagination can

conceive a parent to resort. It seems indeed unquestionable that the privations of the Indians on the lower St. Lawrence are frequently fully as great as those of the Esquimaux within the Arctic circle; while the resources available for them are more uncertain, and subject to greater diminution by the encroachments of the European.

The numbers of the unsettled tribes of the province of Quebec within reach of direct observation and intercourse amount to about 3000, to which must be added the unascertained numbers of the wild tribes. Altogether there cannot be less than 11,000 Indians still left in Eastern Canada; and of these it is obvious that, as fast as they are brought directly into contact with the civilisation and the religious teaching of their European supplanters, they gradually disappear by a variety of processes: of which the only one which it is possible to dwell upon without many painful, though unavailing regrets, is that by which, as in the case of the Hurons of Lorette, we see the descendants of older tribes gradually absorbed into the predominant race, as the waters of the St. Lawrence merge into those of the Atlantic Ocean.

In Western Canada a well-organised system of superintendence was long maintained over the settled tribes; and a superintendent has also been appointed to take oversight alike of the bands in occupation of reserves on the Great Manitoulin Island, and of the Indians who have taken refuge on the numerous islands of Lake Huron or along its northern shores. Until the abandonment of the practice of distributing presents to the Indian tribes, the Great Manitoulin Island was annually the scene of an assemblage, not only of Indians belonging to nearly all the tribes of British North America, but also of many from the United States. No beneficial results, however, appeared to accrue from this practice; and, after sufficient notice had been given, the last distribution took place in 1855. At this annual gathering white traders latterly flocked, like vultures to the battle-

field, and the presents, for the most part, passed into their hands in exchange for gaudy trifles, or for the deleterious fire-water. It was wisely judged, therefore, that the money could be more judiciously expended on behalf of the settled tribes. Nevertheless, the practice has not been abandoned without strong manifestations of dissatisfaction on the part of many; and it is not uncommon for those who have dealings with tribes lying beyond the influence of the Indian superintendents, to find this referred to as a breach of faith, which makes them receive with suspicion any attempts at negotiation. Statements probably loosely made by Government officers or interpreters, circulated among the tribes as a perpetual pledge guaranteed by the honour of the British Crown; and their feelings have repeatedly found expression in some such terms as these: "The Indians of the forests and the prairies were promised the annual renewal of those presents as long as the sun shone, water flowed, and trees grew. The sun still shines upon us, the rivers flow on, and we see the trees renew their leaves, but we no longer receive anything from our great mother beyond the sea." This annual distribution brought under the notice of the officers of the Indian Department representatives of many tribes only now to be met with in the far West; but encouragement was held out to the broken tribes and scattered bands of Western Canada to settle on the Manitoulin Islands; and all who have done so are under the oversight of a resident superintendent, who also visits from time to time the tribes scattered along the neighbouring mainland and the north shore of Lake Superior. Three other superintendents are in charge of the tribes and bands occupying various Indian reserves in the province of Ontario, including representatives of the three great divisions of Iroquois, Algonquins, and Lenapés. The Indians of Ontario, including the islands and north shores of Lakes Huron and Superior, now number upwards of 14,000, embracing representatives of the Six Nation Indians, the

Wyandots, Delawares, and various nations of Algonquins. In 1863 they numbered 13,227: by the latest census they amount to 14,184; but the increase is no doubt partly due to an influx of Indians to the reserves. It thus appears that there are still upwards of 31,000 aborigines in the older provinces of Canada; apart from the Indian tribes of Manitoba and the great North-western wilds of British North America. The Wyandots, now in occupation of the Huron reserve in the township of Anderdon, obtained confirmation of that portion of the ancient territory of their race at the general partition of lands by the different tribes in 1791; but since then a considerable number of them have migrated to the Missouri territory in the United States; and the little band that lingers behind, like that at La Jeune Lorette, is fast merging into the predominant race. In 1858, when they numbered sixty-five, the Commissioners remarked of them: "The Indians on this reserve are mostly half-breeds, French and English; very few, if any, are of pure Indian blood. They must be looked upon as among the tribes the most advanced in civilisation in Western Canada. Many of them speak either French or English fluently, and all, almost without exception, have a keen knowledge of their own interest, and would be capable of managing their own affairs." By returns made to me by the Indian Superintendent of their district, they number at present seventy-two, and of these sixty-five are half-breeds, or of mixed blood. In their religious belief they are nearly equally divided between the Roman Catholic and the Methodist creeds. They have no resident missionary of either church among them, but attend the churches, and mingle with the other worshippers of the neighbouring town of Amherstburg, distant about three miles from their settlement. Here, therefore, is a remnant of the Canadian aborigines fully able to enter, on terms of equality, into competition with the white settlers who are acquiring possession of the hunting-grounds of their Huron ancestry;

and were it not for the protective system of the Indian Department, they would inevitably merge into the general population, and disappear and be lost only in so far as they ceased to be distinguished from other members of the civilised community.

The representatives of the once famous confederacy of the Iroquois, the faithful allies of the English, known as the Six Nations, whose ancient territories lay entirely within the State of New York, migrated to Canada at the close of the American War of Independence; and, in 1784, they were settled on a tract of land on the banks of the Grand River, purchased from its Mississaga claimants, and confirmed to them by letters-patent under the Great Seal. At the same time, one of the tribes of the Mohawk nation settled on the Bay of Quinte under like circumstances; and so recently as 1840 a band of the Oneidas crossed from the United States into Canada, and purchased with their own money a tract of 5400 acres of land on the river Thames, where they are now settled. The Mohawks on the Grand River retain among their prized heirlooms, brought with them from the Valley of the Mohawk, the silver Communion-plate presented to their ancestors by Queen Anne, and bearing the inscription: "A. R. 1711. THE GIFT OF HER MAJESTY, ANN, BY THE GRACE OF GOD, OF GREAT BRITAIN, FRANCE, AND IRELAND, AND OF HER PLANTATIONS IN NORTH AMERICA, QUEEN: TO HER INDIAN CHAPPEL OF THE MOHAWKS." This nation, therefore, had abandoned paganism long before its migration; and since the settlement of the Iroquois tribes in Upper Canada considerable zeal has been manifested by Christian missionaries and teachers in diffusing religious and secular instruction among them. Nevertheless, even now a large majority of the Cayugas, and also part of the Onondagas and Senecas, have not renounced heathenism: and though the Indian reserves on the Grand River have been surrounded and encroached upon by white settlers;

and the town of Brantford—named after the celebrated Mohawk chief,—now numbers upwards of 10,000 inhabitants, the pagan Iroquois still amount to between five and six hundred.

The Indians of the Six Nations have been brought into intimate intercourse with the Whites for upwards of two centuries; and for the last eighty years have been placed in such close contact with them that intermixture of the races has been inevitable. But the variations in this respect are remarkable; and the Mohawks have been distinguished from all the others for the readiness with which, from the earliest date of their intercourse with the whites, they have allied themselves with them, and adopted them into their tribes. From returns furnished by the Mohawks of the Bay of Quinte, it appears that they number in all 759, but of these, all but two are reported to be of mixed blood. No specific notice of the changes thus wrought on the Indian tribes had previously been taken; and the novel inquiry for returns of the number of pure-blood Mohawks left in the tribe appears to have startled its surviving members. The required statistics were accordingly accompanied by the following letter addressed to Mr. W. R. Bartlett, the Indian Commissioner, and signed with the names or marks of Pawles Claus, and four other Mohawk chiefs: "We send herewith the census of our band, as required by the letter from Toronto. All of our people, with the exception of two, are of mixed blood. It may appear strange to the Department that the Six Nations should be so entirely mingled with people of other countries; but it may be accounted for by the fact that our ancestors were allies of the British in the French and Revolutionary wars. It has always been a custom among the Six Nations to supply the place of warriors killed in battle by persons taken from the enemy, in the wars in which we were engaged. Many of our people were killed whose places were filled by prisoners. These prisoners settled in the band, and were always

acknowledged as Mohawks. The Government of that time, knowing our old customs, received them as such, distributing presents to all alike. This happened so long since that the blood of the whites has almost become extinct. But since we have been asked the question, we felt it to be our duty to state the plain fact. No white man has, since the period above named, been recognised as a Mohawk, though a few of our women have married foreigners, the children of whom we recognise." One interesting example of a different class of adopted Indians was to be seen till recently in the lodges of the Bay of Quinte, in an aged squaw, reputed to be one hundred and five years of age at the time of her death. The child of white parents, she was carried off by the Indians in one of their marauding excursions, while they still dwelt in their native Valley of the Mohawk, and survived till 1871, knowing no language but that of the tribe, as thorough an Indian in every sentiment and feeling as if the pure blood of the forest flowed in her veins. Of her lineal descendants, fifty-seven survive, of whom two grandsons are now chiefs.

The Mohawks, among whom the experiment of hybridity has thus been carried so far as almost to efface the last traces of pure Indian blood, betray no symptoms of inevitable extermination. They are among the most civilised Indians of Western Canada, though still manifesting highly characteristic native traits uneradicated by all the admixture of white blood in their veins. The superintendent describes them as beset with an ungovernable propensity for what they term "speculation;" "swopping" horses, cattle, and buggies; and for "trade," i.e. barter; in all which the whites invariably overreach them. "The Mohawks are excellent labourers for short periods. There are in this tribe several native carpenters and shoemakers, one tailor, and one blacksmith. They have at least one hundred and forty children of an age fit to go to school; but though loud in the apparent desire to have their children educated,

like other tribes, the most trifling excuse serves to keep a large portion of them idling about the streets or fields with their bows and arrows. These people, unlike the Chippewas, are not easily removed by threat or arguments from resolutions they may have formed; and they have been so much mixed up in trifling law-suits, that they consider themselves quite competent to express an opinion. In short, they have arrived at that state of semi-civilisation from which I believe nothing but their own future experience and convictions can disentangle them, and leave them open to the reception of friendly advice." There is something piquant in this phase of progressive civilisation, not without its parallel in many a European community, which thus exhibits the Mohawk growing wealthy, opinionative, and litigious; and vexing the soul of his friendly superintendent by choosing to have a will and an opinion of his own. All this, however, will right itself. The Mohawks of the Bay of Quinte appear to have passed the most critical transitional stage. Their numbers have exhibited a large and steady increase during the last quarter of a century. Thomas Claus, one of the chiefs whose name is attached to the letter quoted above, is a skilful builder and carpenter; and when visited by the Commissioners, he was employed in making a lectern for St. Paul's Church, Kingston, the workmanship of which was reported to be excellent. Like most of the Mohawks of the Bay of Quinte, he is a member of the Church of England; and he frequently plays the organ during the service in the Mohawk chapel there. Oronhyatekha, an educated Indian of the same tribe, after pursuing his studies in the University of Toronto, and distinguishing himself in the preliminary examinations for a medical degree, is now successfully practising his profession.

In returns furnished to me from the Indian Department, the children are entered under two heads, the one as half-breeds, *i.e.* the offspring of Indians of mixed blood, and the other as "illegitimate;" and it is added, "by illegiti-

mate children in this return is meant the children of white men by Indian women." The latter, as is seen, are recognised as Mohawks, and of these twenty-three appear in recent returns. This, therefore, points to a source of hybridity in full operation, which has contributed in a still larger degree to produce such a transformation on one hand of the Hurons, as to render them nearly indistinguishable from the white settlers around them. Its influence must inevitably lead to the same results in every tribe thus settled amid the clearings on which the tide of European emigration is annually pouring its thousands, while the red race is cut off from all external sources from whence to recruit its numbers and retard its inevitable absorption or extinction.

The Oneidas, another of the Six Nations settled on the river Thames, have already been referred to as occupying land purchased with their own money, on migrating from the United States. The comparatively independent position to which they have attained is accompanied by very favourable evidences of capacity for self-government. They are settled in the vicinity of the Chippewas and the Delawares or Munsees on the Thames; but their condition presents a favourable contrast to either of those tribes. In 1858, the Commissioners remarked of them: "This band, without any annuity or assistance from the Government, are better farmers than their neighbours the Chippewas. Their clearings are larger and better worked, many of them are able annually to dispose of considerable quantities of grain after providing for the comfortable support of their families. Their houses are generally of a better description, and many are well furnished and neatly kept. A portion of the band are very idle and dissipated, and spend most of their time in the neighbouring villages of the Whites; but taken as a whole, the Oneidas will compare most favourably with any Indians in Western Canada. In numbers there has been a gradual increase." They appear to have kept themselves apart from the Whites in a way that presents

a striking contrast to the statistical disclosures in reference to some others of the Six Nations. The returns furnished to me include no illegitimate children, and specify only six half-breeds among the whole 638 representatives of that ancient people, whose traditions embody a legend that the Onondagas and the Oneidas sprang together out of the ground on the banks of the Oswego River. At a date long prior to the intrusion of the white man, they separated from the Onondagas, and grew to the rank of an independent nation on the eastern shores of the Oneida Lake. There a little remnant still lingers ; but the nation is broken and scattered. The larger number migrated to Wisconsin : this other portion survives apart on its Canadian reserve ; and legend and national tradition are disappearing with that old past to which the Oneidas pertain.

The returns of property, farming implements, and live stock, furnish no unfair test of the progress of the Indian settlements, and several of these have been referred to in illustration of their advancement in civilisation. In the case of the smaller, or the less civilised bands, such property is necessarily on a diminished scale ; but the supplementary notes appended to their tables of statistics afford some curious insight into the workings of the semi-civilised Indian mind, while at times the returns present a whimsical incongruity in the grouping of the common stock. In the census of the Mississagas of Chemong Lake, the public property belonging to the tribe is enumerated as "one log church, one waggon, one wood sleigh, one cow, three ploughs, and one harrow." The Snake Island Chippewas of Lake Simcoe "have, as public property, one frame school-house, occasionally used for public worship, three yoke of oxen, one plough, one harrow, two carts, one church-bell and a grindstone." The Lake Skugog Indians, viewing with suspicion the designs of the Government agent in his too curious inquiries into their joint possessions, refused all information on the subject ; while the Chippewas of Beausoleil Island,

a shrewd band of industrious farmers, possessed of six yoke of oxen, fifteen cows, twenty head of young cattle, farming implements, and other useful property in proportion, communicated to the superintendent this practical stroke of financial policy, which might supply a useful hint to the chancellor of larger exchequers : "The schoolmaster, Solomon James, has been absent, therefore no school has been kept ; and the band have resolved in counsel, that they will not pay any salaries to chiefs or others, except the doctor, as it is so much money taken from the general funds without any corresponding benefit." Such sagacious political economists might be safely assumed as no longer standing in need of any departmental superintendence.

In minute returns furnished to me from eight of the largest Chippewa reserves, it is admitted that out of 1839 Indians, 312 are of mixed blood ; of the Mississagas, out of 530 Indians, 141 are of mixed blood ; of 246 Potawatomes, only twenty are returned of mixed blood ; and of 390 Delawares, only 16 ; though it can scarcely be doubted by any one familiar with the habits of frontier life, that all of those bands have taken up some considerable amount of white blood at an earlier date. In some of them the numbers are rapidly diminishing, under circumstances which could not fail to produce the same results on an equal number of white settlers ; but in other cases increasing numbers are the healthful concomitant of industrious habits and accumulating property ; and the Commissioners, in the Report of 1858, when urging the claims of the Indians to the permanent protection of the Imperial Government, add : "We cannot coincide in the opinion that the Indian service is an expiring one. The statistics in this Report militate strongly against the theory of a steady decline in the numbers of the Indians."

Such, then, are the illustrations which Canada affords of the transitional process which precedes the inevitable disappearance of the last remnants of its aborigines, including refugees from the tracts of extinct nations now occupied

by the industrious population of the United States. The extension of Canadian authority over the vast regions of the North West, with its numerous wild tribes, frequently in open hostility to each other, greatly complicates the question of the relations to be maintained with the aborigines. The system of protection and pupilage under which, from the most generous motives, the Indian has hitherto been placed in the older provinces, has unquestionably been protracted until, in some cases at least, it has become prejudicial in its influence. It has precluded him from acquiring property, marrying on equal terms with the intruding race, and so transferring his offspring to the common ranks. While, however, in this transitional stage, a large proportion of the degenerate descendants of the aborigines absolutely perish in their premature contact with European civilisation, the Half-breed of the frontier occupies a more favourable position. He mingles, in many cases, on a common footing with the settlers of the western clearings; his children grow up as members of the new community; and that inevitable process of amalgamation produces the same results there, which, it is manifest, are rapidly blending the traits of Indian and White blood among the longest settled and most civilised survivors of the aboriginal nations of Canada.

The causes which have been referred to, as operating to prevent either the half-breed Indians or their posterity from being transferred in a condition of social equality to the common ranks of the New World's settlers, are neither irremediable nor of universal application. The honours of the Government House at Vancouver Island were recently done by the daughters of an Indian mother; and the hospitalities of more than one Canadian parsonage have been enjoyed by the author, where the hostess had the red blood of the aborigines in her veins. In the United States the antipathies between the border settlers and the wild tribes have been intensified by the abuses of unprincipled government agents, until the two races now stand, for the most part, in

open antagonism to each other. But no prejudice affects the social equality of the Indian half-breed ; and although the frequent border wars between the races preclude any such amalgamation as that which has taken place on so large a scale in the Hudson's Bay territory ; yet the extent to which even those wild tribes have been modified by an admixture of white blood is very imperfectly appreciated. Mr. F. Parkman, an acute observer, informs me that, years ago, in the far west, he saw adult members of one of the wildest and fiercest tribes, the Arapahoes, with full beards, like white men ; and Sioux of the remotest western band with red hair. Thus the amalgamation of the races has been in process in spite of every obstacle ; and Mr. Lewis H. Morgan, in replying to inquiries regarding the extent of hybridity in the United States, thus concludes : " When the Indian acquires property, and with it education, and becomes permanently settled, then honourable marriage will commence, and with it a transfer of the posterity to our ranks. I hope to see that day arrive ; for I think we can absorb a large portion of this Indian blood, with an increase of physical health and strength, and no intellectual detriment." Whether it is calculated to prove beneficial or not, this process has not now to begin ; though a change in the relative position of the civilised Indian with the occupants of the older settlements may tend greatly to increase it. The same process by which the world's old historic and unhistoric races were blended into elements out of which new nations sprung, is here once more at work. Already on the Red River, the Saskatchewan, the Columbia, and Fraser's River, on Vancouver Island, and along the whole Indian frontiers both of the United States and British North America, the Red and the White man meet on terms of greater equality ; and the result of their intercourse has been to create a half-breed population on the site of every new western clearing, apart from those of mixed blood who are reabsorbed into the native tribes.

The statistics of the more civilised and settled bands of Indians in Upper and Lower Canada do not indicate that the intermixture of red and white blood, though there carried out under unfavourable circumstances, leads to degeneracy, sterility, or extinction ; and the result of their intermingling in the inartificial habits of border life, is the transfer of a larger amount of red blood to the common stock than has hitherto, I believe, received any adequate recognition.

CHAPTER XXIII.

INTRUSIVE RACES.

ETHNOLOGICAL EXPERIMENTS—TRADITIONS OF THE ARTHURS—PROCESSES OF MIGRATION—DIFFUSION OF POPULATION—RATE OF PROGRESS—AFRICAN ENDURANCE—PROFILE OF AFRICAN BLOOD—COLOURED POPULATION OF CANADA—ACCLIMATION—VOLUNTARY ISOLATION—THE ISLAND OF HATTI—INDIANS OF HISPANIOLA—THE HAYTIAN REPUBLIC—INHERITED ETHNICAL PROGRESS—UNJUST COMPARISONS—HAYTIAN PRODUCTS—POPULATION OF HATTI—THE AMERICAN COLOURED RACE—AFFINITIES AND REPUSSIONS—MAN IN A STATE OF NATURE—A MODIFIER OF CREATION—CONDITION OF THE COLOURED RACE—MIXED WHITE AND NEGRO BLOOD—ASSUMED TENDENCIES—PHENOMENA OF HYBRIDITY—AMALGAMATION—THE MULLATOES—DEVELOPMENT OF NEW VARIETIES—THE WHITE RACES IN AMERICA—THEORY OF ASSIMILATION—PERMANENCY OF TYPES—THE NEW ENGLANDER—THE ENGLISHMAN—DIVERSE TYPES—PIGMEY ENGLISH—PATONS—CHINOOK LANGUAGE—THE OREGON JACONS—ACCENT AND EMPHASIS—BRITISH COLUMBIA—PROGRESS—THE NEW WORLD'S FUTURE.

Do races ever amalgamate? Does a mixed race exist? asks Dr. Knox:¹ himself the native of that little island-world where, favoured by its very insulation, Briton, Gael, Roman, Pict, and Scot, Frisian, Saxon and Angle, Dane, Norman, and Frank, have for two thousand years been mingling their blood, and blending their institutions into a homogeneous unity. In seeking an answer to the great problem of modern science involved in such inquiries, the insular character of Britain presents some important elements tending to simplify the inquiry. But the archæological and historical data illustrative of the process by which its island race has attained to such development, become of secondary importance, when compared with the gigantic scale on which undesigned ethnological experiments have

¹ *The Races of Men*, Lect. i.

been wrought out on the American continent. Admitting, for the sake of argument, all that is implied, not only in acknowledged Asiatic affinities of the Esquimaux, but the utmost that can be assumed in favour of any peopling of America by means of Phœnician, Celtiberian, ancient British or Scandinavian colonisations : it nevertheless remains indisputable that the Western Hemisphere has been practically isolated from the Old World and all its generations for unnumbered centuries. The traditions of the Aztecs told of an era when Quetzalcoatl, the divine instructor of their ancestors in the use of the metals, in agriculture, and the arts of government, dwelt in their midst. Fancy pictured in brightest colours that golden age of Anahuac, associated with the mythic traditions of some wise benefactor and civiliser. But amid all this, a curious definiteness pertains to the physical characteristics of this ancient benefactor. He was said to have been tall of stature, with fair complexion, long dark hair, and a flowing beard. This remarkable tradition of a wise teacher, superior to all the race among whom he dwelt, and marked by characteristics so unlike the native physiognomy, was accompanied with the belief that, after completing his mission among the Aztecs, he embarked on the Atlantic Ocean for the mysterious shores of Tlapallan, with the promise to return. How far the rumours of Spanish invasion preceded the actual landing of Cortez, and helped to give shape to ancient traditions, it must be difficult to determine. Nearly thirty years elapsed between the first discoveries of Columbus and the landing of Cortez on the Mexican shores ; and many a tale of the strange visitors who had come from the ocean's eastern horizon, armed with the thunder and the lightning, and with a skill in metallurgy such as the divine teacher of the art could alone be supposed to possess, may have shaped itself into the popular conception of the good Quetzalcoatl, ere it reached the Mexican plateau. But the tradition seems like an embodiment of memories of older intercourse with the race of another hemisphere, when Egyptian or

Phœnician, Greek, Iberian, or Northman, may have dwelt among the gentle elder race of the plateau, before the era of Aztec conquest, and taught them those arts wherein lie the essential germs of civilisation. If so, however, the race remained physically unaffected by the temporary presence of its teachers; and continued to develop special characteristics of the American type of man, until Columbus, Cabot, Verrazzano, and Cartier, Cortez, Pizarro, De Leon, Raleigh, and other discoverers and explorers, prepared the way for the great ethnological experiment of the last three centuries, of transferring the populations of one climate and hemisphere to other and totally diverse conditions of existence on a New Continent.

But now we witness on the American continent two essentially distinct forms of migration, by means of which the capacity of the indigenous man of one quarter of the globe to be acclimatised and permanently installed as the occupant of another, is to be fully tested. First we have the abrupt transport of the Spaniard to the American archipelago, to the *tierra caliente* of the Gulf coast, and the *tierra fria* of the plateau; the equally abrupt transference of the Englishman to the warm latitudes of Virginia and the bleak New England coast; and the attempt of the colonists of Henry IV. and Louis XIII. to found *la Nouvelle France* between Tadousac and Quebec, where winter reigns through half the year, and the thermometer ranges at times from 30° to 40° below zero. Again, we have the compulsory migration of a population derived from the interior and the Atlantic coasts of the African continent, to the islands and the southern states of America, where experience indicates that the industrial occupation of the soil is incompatible with the healthful development of European races.

But on the same continent another and totally distinct process of migration is also in operation, analogous to that by which the ancient earth must first have been peopled, whether from one or many centres of human origin. Unnumbered ages may have elapsed after the creation of man,

before, on the theory of his passage from Asia to America, the first progenitors of those whom we call its aborigines acquired a footing on the soil of the New World. Its ancient forests and prairies, its lakes, river valleys, and mountain chains, lay all before them, to be subdued, triumphed over, and, with their wild fauna, to be made subservient to the wants and the will of man. From one or many points the ever widening circle of migration enlarged itself, until, throughout the broad territories of the Western Hemisphere, from the Pacific to the Atlantic, every region had passed to its first rightful claimants. Thus secured in full possession of his soil, the American Mongol made of it what he willed through all the centuries of his race's destiny, till that memorable year when, according to the traditions of the Mexican plateau, the race of Quetzalcoatl came to fulfil the doom of Montezuma's line, and to accomplish the prophecies of Aztec seers. Then followed the second migration to the New World, which is still in progress, and only differs from the primary migration in this, that the forest and the prairie are already in occupation; and with their wild fauna, the scarcely less wild aborigines have to be subdued, supplanted, or embraced within the conquests of nature to the uses of civilised man.

Once more, accordingly, from many single points, as from the Pilgrim Rock of Plymouth Bay, the new population has diffused itself continuously in ever widening circles. It has been estimated that, under the combined influences of natural increase and constant augmentation by immigration, the outer circle of the great western clearings encroaches on the unreclaimed West at the rate of about nine miles annually throughout the whole extent of its vast border. We know that the New Englander, abruptly transplanted to South Carolina or Alabama, is as incapable of withstanding the climatic change as the old Englander. But if we suppose the first settlers of New England to have

been left to themselves, with their indomitable industry and earnest enterprise, to build up a well-consolidated community, to frame laws for the government of the growing society, and to send out hardy young pioneers to win for themselves the needful widening area : we can see how, in the lapse of centuries, younger generations would at length reach the Gulf of Florida and the Rocky Mountains, without any one of them having travelled beyond the circumference of its previously acclimated region ; unless indeed we believe, with the extreme sticklers for well-defined habitats of indigenous races of men, that such an intrusive exotic race, however much it may seem for a time as though it were begetting native inheritors of the territorial acquisition, is in reality only

" Like a circle in the water,
Which never ceaseth to enlarge itself,
Till, by broad spreading, it disperse to nought."¹

This is the actual question which has to be solved by means of the dual migration of the fair and the dark races, who have become the supplanters of the indigenous tribes of America. And by such means many questions besides this have already been at least provisionally answered. Are subdivisions of the human family indigenous in certain geographical habitats, and incapable of permanent translation to other regions ? Are the indigenous types of such distinct habitats capable of innocuous amalgamation ? In other words, do the subdivisions which ethnography clearly recognises in the human family, partake so essentially of the characteristics of distinct races among the inferior orders of creation, as to be incapable of permanently perpetuating an exotic life, or transmitting fertility to a mixed breed ? To the different questions involved in this inquiry, one school of American and British ethnologists has replied with a distinct and strongly asserted negative ; and the strength of the convictions of American ethnologists is shown by

¹ *Henry VI.* Part 1. Act 1. Scene ii.

their adoption of a view so inimical to the theory of permanent triumph as the destiny of the Anglo-American colonists of the New World.

The African owed his involuntary migration to the Western Hemisphere to the belief, which the experience of centuries has confirmed, that this distinct type of man, transported to an entirely different geographical area, and to a diverse climate, would nevertheless prove more enduring than the indigenous Red Man of the soil. The whole instincts of an essentially unmaritime race were outraged by the transportation of the African to the New World. The caravan, and the patient assiduity of overland commerce and interchange of the commodities of countries separated by burning tropical regions and waterless deserts, have been the characteristics of Africa in every age. The camel is her ship of the desert, and maritime enterprise pertained there only to the era of her Punic colonies. No test could therefore seem more completely to satisfy all requirements, relative to Agassiz's postulate of the natural relations inherent in the different types of man, and in the animals and plants inhabiting the same regions. A subdivision of the human family most strongly marked in type, in opposition to all its natural or acquired instincts, was forcibly transported to another continent, inhabited by indigenous tribes essentially diverse in all their physical characteristics. Ethnologists are not quite agreed as to all the results; for it is difficult for the American writer to separate the consequences of this great, though undesigned scientific experiment, from its incidental political and social bearings. This, however, is beyond dispute, that the African, under all the disadvantages of transference to a new geographical region and diverse climatic influences, has held his ground where the indigenous Red Man has perished. The difficult question of hybridity complicates the further bearings of the experiment; for a hybrid race like the "coloured people" of the United States, intermingling with the white

race under relations which till recently precluded them from such free agency or voluntary isolation as pertains to the half-breed Indians of British America, is necessarily in an unstable condition.

There are nearly five millions of people of African blood in the United States, and certainly not less than ten millions throughout the continent and islands of North and South America;¹ but of those by far the larger proportion consists of hybrids. Their numbers were, until recently, increased to a small extent by direct, though illicit transmission of the pure stock from Africa; still more they have been largely augmented by the intermixture of white and black blood, under circumstances least accordant with the natural instincts of man, and placed for the most part beyond reach of the statistician. All this tends to complicate the question. The recent abolition of slavery, and the extension of equal civil rights to the coloured population of the Southern States, have, we may hope, prepared the way for more equable relations between the races of European and African descent. But the abrupt transfer of political power to an uneducated race of emancipated slaves has little tended to accelerate the desired result, or to diminish the prejudices of caste. The inferior race has found that liberty is accompanied with many obligations and responsibilities, for which its previous condition furnished no training. Nevertheless marriage and the healthful social relations of a free people have been secured to them; and thus far they continue to hold their ground, in spite of conflicts and collisions which have threatened at times a war of races. According to the census of 1860 there were 3,979,741 slaves, and 488,005 free coloured people in the United

¹ The numbers have been estimated as high as fourteen millions. That given in the text is based on the following estimate: the United States, 4,968,994; Brazil, 2,000,000; Hayti, 950,000; South and Central America, 900,000; Cuba, 900,000; British Possessions, 700,000; French Possessions, 230,000; Dutch, Danish, and Mexican, 120,000. The data for some of the statements are very imperfect, but in such cases I believe the numbers are understated.

States; in 1870 the whole coloured population amounted to 4,968,994. But the vast changes in the political and social organisation of the United States, which the constitutional enactments of 1868 and 1870 begot, gave to nearly four millions of slaves all the rights and privileges of citizenship; and so conferred on them far more than equality with their former masters. They in reality became masters throughout the Southern States, without any of that training which through the long struggle of centuries has schooled the Anglo-Saxon race to that capacity for self-government which has made of it the colonising race throughout the world. It remains for future generations to determine the results of such an experiment, and to show how far the hybrid coloured population of the United States is capable of permanency, either by the development of a fixed hybrid type, or by continuous fertility, until the predominant type reasserts its power, by a return to that of the original white or black stock.

In Canada the coloured population was estimated in the census of 1850 to number about 8000; according to that of 1861 they had increased—doubtless to a great extent by immigration,—to 11,395; and, though the changes resulting from emancipation in the Southern States have not only arrested the coloured emigration to Canada, but led to the return of many to the South, the census of 1871 states the coloured population of Canada to be 21,496. The numbers are no doubt understated, especially in the earlier censuses; as the older coloured settlers are unwilling to return themselves as such in the census papers; and in a country where the law recognises no distinctions of colour, the ethnical differences of which they are the indication present little importance to the census-taker. The coloured population is chiefly congregated in the large towns and frontier localities, as at St. Catharine's, Chatham, and on the Buxton settlement in Western Canada. Admitted as it is to a perfect political equality, with access to the common schools and other educational institutions of the Province: it is placed

under circumstances calculated to afford some fair test of its fitness for bearing a part in the progress of a free community, and of its capacity for acclimatisation in a region essentially diverse either from the native continent of the African race, or the American States which have become, in a secondary sense, native centres of the coloured population of the New World. But too brief a period has elapsed to furnish any fair data for judging of the fruits of this experiment; and systematic inquiries instituted for the purpose of testing the results already noticeable, have led to no very precise or reliable returns. In 1863, Dr. S. G. Howe of Boston, visited Canada as a commissioner appointed to inquire into the condition of the coloured population in the Western Province. In his report he affirms conclusively "That the births have never equalled the deaths; and therefore there has been no natural increase, but on the contrary a natural loss; and that, without constant immigration, the coloured population of Canada must diminish and soon disappear."¹ But it must be borne in remembrance that, while his estimation of their numbers nearly doubled that of the recent census, it was a mere vague approximation to the truth. The data for any trustworthy deductions on such points are wanting; and his opinion on the evanescent character of the coloured population of Canada may be regarded as a mere echo of what had long been asserted by American statist and ethnologists on other than scientific grounds. The greater number of the coloured fugitives were recent immigrants; and many of them reached Canada in a condition not only of privation but disease, which might well lead to an excess of deaths over births, without involving any evidence that extinction is the inevitable destiny of such a population in the more favourable circumstances to which the survivors are attaining under the equality of British law. This, however, is to be observed, that, whether from habits already acquired

¹ *Report to Freedmen's Inquiry Commission*, S. G. Howe, Boston, 1864.

under a different social condition, or from causes specially pertaining to their own physical and intellectual type, the coloured population of Canada voluntarily perpetuate social distinctions which separate them as a class from the general community. They have their own places of worship, their benevolent societies, assemblies, and festivals; and thus throw obstacles of their own creating in the way of amalgamation. This is probably mainly to be accounted for by the prejudices of caste meeting them with little less force in Canada than in the neighbouring Union; and by the fact that they necessarily belong, with few exceptions, to the poorer classes, and have therefore a keener sense of social equality among themselves, alike in religious and festive assemblies, than when asserting their claims to such among the general community.

But the experiment of a population of African origin transferred to a region essentially different from its native habitat, and after mingling its blood alike with that of the native and the European, being at length left to its own resources for self-government and the perpetuation of the race: has been tried, and is still in progress, under very remarkable circumstances, in the island of Hayti. The island is nearly as large as Ireland; and with a surface of about twenty-five thousand square miles, presents a remarkable diversity of soil and climate. The central mountain group rises to an elevation of some eight thousand feet above the level of the sea, and from this, mountain ranges branch off in various directions, dividing the island into broad valleys and extensive savannahs or meadows. With the surface thus broken up by lofty elevations, it is generally well watered in the valleys and plains, and is considered to be the most fertile, as well as one of the most healthy, islands of the Antilles. It has a coast line of about twelve hundred miles in extent, indented with bays, and with many harbours, some of which are spacious, well sheltered, and offering accommodation for a numerous fleet.

The climate is peculiar, with a rainy season occurring at different periods on its northern and southern coasts, and a temperature modified by the prevalence of northern winds, land breezes, and the varying elevations of the surface. The winter is equable and cool, and the heat of the summer is moderated by the prevailing winds, so as to present little climatic correspondence to any region of the African continent; and even to contrast strikingly in this respect with the other Antilles.

The history of this beautiful island is full of interest for us. When Columbus, during his first voyage among the earliest discovered islands of the New World, was perplexed amid the varied and deceptive allurements which hope and fancy conjured up for him on every side, the lofty mountains of Hayti rose on his view above the clear horizon, and gave evidence of a region of wide extent. The mountains were higher and bolder in their rocky outlines than any he had yet seen, and swept down, amid rich tropical forests, into luxuriant savannahs; while the cultivated fields, the canoes along the shore, the columns of smoke by day, and the fires that lighted up the island coast at night, all gave promise of a numerous population. Wandering amid the shades of its tropical vegetation, in the month of December, under trees laden with fruit, and listening to the melody of birds, among the notes of which they fancied they recognised the sweet voices of the nightingale and other songsters familiar to them in the far distant groves of Andalusia, the voyagers gave to the new-found island the name of *Española*, or Little Spain. Among all the beautiful islands of the newly-discovered archipelago, none impressed the first voyagers so strongly with its natural charms, or with the virtues of the gentle race who lived amid the luxuriance of their favouring climate in a state of primitive simplicity. None, among all those who welcomed the strangers as heavenly visitants, were doomed to look back with more mournful bitterness on that fatal hour when the white sails

of the "Santa Maria" first rose on their horizon. They are described by Las Casas as a well-formed race, fairer and more perfect in figure than the natives of other islands; but gentle, careless, and altogether indisposed to toil. Experience, indeed, soon revealed to the Spaniards the presence of the fierce Carib, as well as of the docile Indian native, on the island. But he was an intruder like the Spaniard; and Carib and Haytian shared alike in the exterminating violence of the Spanish lust for gold. They perished, toiling in the mines, in vain resistance to oppression, or despairingly, by their own hands; so that, according to the venerable Las Casas, who witnessed many of the horrors he describes, before twelve years had elapsed from their first friendly welcome of the Spaniards as celestial beings, several hundred thousands of the Indians had been exterminated. The original population of Hispaniola can only be a subject of conjecture; but in 1507 it had been reduced to sixty thousand; in 1535 only five hundred remained, and the last survivors of the aboriginal race died out in the early part of the eighteenth century. But it was at the earliest stage of this exterminating process that the idea was suggested, of substituting the robust and patient African for the weak and indolent Islander. The first negroes were transported to the Antilles, in 1503, only eleven years after the discovery of Hispaniola by Columbus; and for three centuries thereafter the nations of Europe made merchandise of the African race, and transplanted them yearly by thousands to the islands and the mainland of the Western World. By such means the aborigines were displaced and supplanted by a different race; though they have not even now so totally disappeared but that traces of Indian blood are discernible, intermingled with that of both intruding races. Their characteristic features and luxuriant hair contrast strikingly with those of the predominant African type; and such mixed descendants of the native stock are still called *Indios*. The modern name of Hayti

is a revival of a native term signifying "the mountainous country," and implying in its adoption the rejection of all foreign interference by its later race.

The French acquisition of the Haytian territory, which contributed so largely to its ultimate emancipation and independence, dates from the reign of Louis XIV. Towards the close of the eighteenth century, it was regarded as the most valuable of all the foreign settlements of France. But the Revolution, in which the descendants of the Grand Monarque perished on the scaffold, extended its influence to the remotest French possessions. In 1795, the negro slaves of Hispaniola were, by a vote of the National Convention, declared equal participators in the liberty and equality which France had proclaimed to all her citizens, and they hastened to imitate the example of Paris. A general insurrection of the coloured population ensued. All the white inhabitants who escaped massacre were compelled to emigrate, and Toussaint l'Ouverture, a black chief, established the first Haytian Republic in 1801. The subsequent history of Hayti, if compared with the neighbouring continental republic, is not very favourable to the capacity of the coloured race for self-government. Presidents, military dictators, emperors, and other changing phases of supreme rule, have marked the unstable constitution of the black commonwealth. After the whole island had been united for a time, it divided once more into an empire and republic, parted by the same boundaries which formerly separated the French and Spanish divisions of the island; and Spain, taking advantage of a favourable opportunity, attempted in recent years to reassert a title to her ancient possessions. Meanwhile, the Emperor Soulouque has been driven into exile; his marshals, dukes, barons, and knights have vanished with the fountain of such questionable honours; and General Michel Domingue is president of the Republic of Hayti. The instability of a government founded on insurrection and revolution has marked the varying

phases of the Haytian Constitution. But the Government of France, since the reign of liberty and equality was proclaimed in Hayti, has not been so stable as to justify any contrast between it and its insular offshoot ; whilst a comparison with the neighbouring Spanish republics of the New World tells even less in favour of the capacity for self-government of the colonists of southern European blood. In the Haytian Republic complete religious toleration is established, education is encouraged, and emigration of "the blacks, men of colour, and Indians in the United States and the British North American provinces," has been invited by the offer of free grants of land, and all rights of citizenship. A concordat between the present Pope and President Geffrard was published at Port-au-Prince, in 1863, creating an archbishop and four bishops ; and by a special article, his Holiness is not limited in the choice of these Haytian ecclesiastics, to the dark race. Time, therefore, must be allowed the Haytian before we infer from the history of this black Republic, that the men of mixed African blood are incapable of self-government, or of permanent independent existence.

In truth, this view of the great ethnological experiment forces us back on the question of inherited progress, and the physical and intellectual development of whole races by the protracted influences of civilisation. In the eighth and ninth centuries the insular Anglo-Saxon was among the least civilised of all the nations of Christendom. He was far inferior to the Irish Celt in arts and learning, though even then displaying greater capacity for self-government. Danish conquest and rule did something for him ; Norman conquest accomplished a great deal more. Slowly, through successive generations, the Saxon helot of the Conquest grew into the sturdy English freeman of the Reformation era ; and then, in the marvellous Elizabethan age that followed, while the principles of free government were still partially defined or understood, but when the intellect of

the nation was at its ripest, the Anglo-Saxon colonisation of the New World began. The Roman Catholic sought freedom there from Anglican intolerance; the Puritan found a refuge from ecclesiastical and political tyranny; and the schooling of England's Commonwealth, the Covenanters' struggle in Scotland, and the crowning Revolution Settlement, all guided the little detached communities of exiled Englishmen scattered along the clearings from Cape Cod to the Gulf of Florida, and trained them, through a protracted minority, for independent self-government.

Can a grosser injustice be conceived of, than to place a government thus established on the foundations of a thousand years, by free sons of the freest nation in the world, in comparison with the hasty improvisation of a nation of slaves? In 1795, the whole educated, civilised, and governing class disappeared from Hayti; and a race far below the standing of the Saxon helot of the Conquest, galled with the recent chains of slavery which so peculiarly unfit man for moderation as a ruler, without education and without experience, were suddenly summoned to govern themselves. It is something to say of such a people that their government has not proved less stable, nor less compatible with the progress of the community, than the republics established by the descendants of the Spanish discoverers and depopulators of Hispaniola.

The statistics of the Haytian Republic furnish some important contributions towards the desiderated answers to ethnological inquiries. So far as the material returns of the political economist are concerned, the response is anything but satisfactory. Eighty years ago Hispaniola was noted for its rich plantations of sugar, coffee, and cotton. Three years before the memorable declaration of the National Convention of Paris, the agricultural produce of that portion of the island which then belonged to France was valued at eight millions sterling. Sugar no longer reckons among the Haytian exports; the cotton plantations yield little more

than one million pounds weight per annum ; the coffee plantations have been greatly reduced ; and the whole annual exports little exceed one million pounds sterling. The principal commercial wealth of the island is now derived from the magnificent forests of mahogany and fine dye-woods with which its mountains are clothed, and the hides and jerked beef of numerous herds of cattle pastured on its verdant plains. The island aristocracy disappeared in the insurrection and emigrations of 1795, and with them the luxurious demands which the artificial wants of a highly civilised community create. The gardens and forests produce almost spontaneously cocoa-nuts, pine-apples, and the fruits introduced by the Spaniards from southern Europe, such as figs, oranges, pomegranates, and almonds. Maize, millet, cassava, plantains, and sweet potatoes are raised with little labour ; and the Haytian race of African blood have to a great extent resumed the life of ease and careless indolent enjoyment in which the aborigines passed their days under the rule of their native caciques.

The Spaniards, who broke in upon that enviable scene, described the very social existence which they so ruthlessly destroyed as seemingly realising the golden age of poets' dreams. Doubtless it had its full share of the evils inseparable from the most favoured savage life ; but the worst of these were of little moment when compared with the pandemonium which the presence of Europeans created. Perhaps the unproductive life of the modern Haytian, while supplying all his moderate wants, contrasts as favourably with the productive era prior to the declaration of independence, as did that of the gentle indigenous race before the Spaniards explored their mines for gold, and made the island a source of wealth alike to the colonist and the crown by the fatal system of *repartimiento*. The present population is said to employ only about two hours a day in productive labour, and to seek its enjoyment in the pleasant ease to which the perpetual summer of the island climate invites. But con-

flicting parties and political revolutions, no less than the frequent hurricanes and occasional earthquakes of Haytian latitudes, disturb the reveries of such indolent dreamers, and recall them to some of the stern realities of life. The moral tone of the community, moreover, is reputed to be fully as low as might be anticipated among a people so recently emancipated from slavery; and thus it appears that neither the Indian Arcadia nor its African successor, amid all the unequalled advantages of soil and climate, could escape the malign elements by which man mars every paradise into which he is admitted.

But those are incidents apart from the real question: which is not whether an intrusive exotic race of pure or mixed African blood will raise any given quantity of sugar, coffee, and cotton; but whether it can rear such young generations of its own race as shall perpetuate the intruders, and beget permanent inheritors of the soil. Time is required for fully testing this question, but the statistics of the Haytian empire and Republic seem so far to render a very satisfactory reply. Before 1791 the population is believed to have been about 700,000 souls. Since then the commerce of the island has greatly decreased, but its population has gone on steadily advancing, and with returning order, industry has revived. The total imports of Hayti, as distinguished from the eastern Republic of San Domingo, averaged £1,250,000, and the exports £1,820,000, between 1868 and 1870. According to the census of 1824 the entire population of the island amounted to 935,000; in 1852, Sir Robert H. Schomburgk estimated it, including the empire and republic into which the island was then divided, at 943,000; and with the additions by recent immigration, besides the ordinary increase, it cannot now be less than 950,000 souls. This progressive increase in the population of Hayti has taken place under circumstances far from favourable to such results. Revolts, expatriations, wars, and revolutions have all contributed to retard its progress; and

in 1842 a terrible earthquake overthrew several towns, and destroyed thousands of lives. Nevertheless, during its brief term of independent existence, whatever other elements have tended to arrest its advancement, no indications suggest any proof of that inherent tendency towards degeneracy and sterility which have been affirmed to involve the inevitable extinction of such a hybrid race.

The evidence derivable from the five millions of coloured people in the United States, in reference to the subjects under consideration, is complicated, and deteriorated by various elements of uncertainty inseparable from the peculiar social condition in which they have hitherto been placed, especially in the South. Nevertheless, the American coloured race offers to the ethnologist a highly interesting subject for investigation; and presents materials from which to gather data for future deductions of a more determinate character. Dr. J. C. Nott, who has given this subject the most systematic attention, enjoyed peculiarly favourable opportunities for its study, during a residence of half a century among the mingled white and black races of South Carolina and Alabama, and twenty-five years' professional intercourse with both. The conclusions he arrived at, it cannot be doubted, have been affected in some degree by opinions and prejudices inseparable from observations made on the two races placed on so unequal a footing as they have been in the States referred to; and his deductions from the evidence he reviews, must be considered along with the fundamental theory he entertained, that the genus *homo* includes many primitive species, and that these are amenable to the same laws which govern species in many other genera. He regarded such species of men as all *proximate*, i.e. producing with each other a fertile offspring, in contradiction to *remote species*, which are barren, and *allied species*, which produce *inter se* an infertile offspring. But along with this, he maintained that while some are perfectly prolific, others are imperfectly so, possessing a

tendency to become extinct when their hybrids are bred together.¹

More extended opportunities of observation also led Dr. Nott to the conclusion that certain *affinities* and *repulsions* exist among various races of men, which cause their blood to mingle more or less perfectly. Contrary to deductions published before his observations were extended to Mobile, New Orleans, and Pensacola: he acknowledges having witnessed there many examples of great longevity among mulattoes; and sundry instances where their intermarriages, contrary to his antecedent experience in South Carolina, were attended with manifest prolificacy. He accordingly recognises an essential distinction between mulattoes of the Atlantic and Gulf States. The former he regards as the offspring of intermixture between the negro and *fair-skinned* European races, Teutonic and Celtic, between whom no natural affinity exists, and who are consequently destined to speedy extinction. The latter owe their white blood to French, Italian, Spanish, Portuguese, and other *dark-skinned* European races, with whom he conceives certain affinities to the dark races of Africa exist. This classification anticipates in some degree the *Xanthochroi* and *Melanochroi* of Professor Huxley's systematic anthropology. But the classing of the French wholly in the dark-skinned group is manifestly suggested more by the actual history of the white colonists of the Gulf States, than by any preconceived ethnic characteristics. France can only be detached from the Celtic nations of Europe by an exaggerated estimate of the very limited Basque element of its south-western provinces. But to this dark-skinned, black-eyed, black-haired Basque race of southern Europe, an approximation to the African Berber, both in physical and moral traits, is suggested; and thus sufficient ethnic affinities are recognised between the essentially distinct European and African "species" of

¹ *Hybridity of Animals viewed in connection with Mankind*, p. 379; *Types of Mankind*, p. 81.

man to account for the phenomena resulting from their intermixture. "Such races, blended in America with the imported negro, generally give birth to a hardier, and therefore more prolific stock than white races, such as Anglo-Saxons, produce by intercourse with negresses."¹

In pursuing this inquiry, Dr. Nott followed the example of Jacquinot, Hamilton Smith, and other ethnologists, in assuming that, "zoologically speaking, mankind and *canidæ* occupy precisely the same position," and that, in reference to the influences of climate, domestication, and hybridity, mankind is governed by the same zoological laws which regulate animals generally.² But those are propositions which I am not prepared to admit without considerable qualification. Apart altogether from the question of unity or multiplicity of species, this fact is overlooked, that man's normal condition is that of domestication, which for all other animals is an essentially artificial one. Take man in what is popularly called a state of nature, such as the Red Indian of the American forests or prairies. He lives in a community controlled by many binding, though unwritten laws; he selects his food, and modifies it by artificial means, with the aid of fire and other preparatory and conservative processes; he clothes himself with varying coverings according to the changing climate, and also according to fashion, taste, and prescriptive usage. His marriage, the treatment of his wife or wives, the physical nurture and training of his offspring, and the choice of the locality for their permanent residence, are all regulated in a very arbitrary manner, by motives and influences resulting from his social condition. The very shape of the head, the scarification and deformation of the body, and the rites and practices accompanying birth, puberty, marriage, sickness, and death, are all determined by complex influences, to which there is nothing analogous among the lower animals. Man

¹ *Hybridity of Animals*, p. 374.

² *Ibid.* pp. 376, 394.

superinduces upon them artificial conditions of life which are natural to himself. The hunted savage, driven forth into the wilderness, still manifests the "instincts" of domestic and artificial life. He, and he alone, is a clothing, cooking, fire-making, tool-using animal. In his most savage condition he is distinguished from all other animals by certain characteristics which seem to point to civilisation as his normal condition. Accordingly civilised man is the most fully developed physically as well as intellectually. The white hunter and trapper soon surpasses the Indian even in the skill and endurance of forest life. The civilised man endures most easily sudden changes of climate; and withstands longest the privations to which previous training would seem calculated to render him most sensitive.

The very opposite of all this is true of the domesticated animal. Domesticated cattle, housed, artificially fed and tended, are superior to the wild cattle in the milk which they yield, the supply of animal food they furnish, and the specialities of breed for the conditions best adapted for the uses to which man has diverted them. But their natural instincts have disappeared. They are less sagacious, less hardy, and have become altogether dependent on an artificial condition of existence which they cannot beget for themselves. And this domestication of the inferior animals is one of the artificial changes natural to man, and to man alone. The germ of it is seen in the savage with his dog and his horse. It constitutes the special characteristic of the next stage of social progress, the pastoral state; and in its full development man becomes in a peculiar sense a modifier of creation. As the result of this lordship over the inferior animals, we see the horse, the ox, the sheep, the hog, the ass, the camel, and the dog transplanted to the continents of America and Australia, to the Cape, and to every island where the civilised European has found inducements to effect a settlement. His wishes and necessities require it, and forthwith animal life multiplies in specific

forms, on spots where nature had placed otherwise insurmountable barriers to its introduction. He calls into being new varieties of the ox and the sheep, suited to his requirements, or even to his taste. One man, Robert Bakewell of Diskley, originated the Leicester breed of sheep; to another, Arthur Young, is ascribed the South-down breed; so also, short-horn and long-horn, Durham, Devon, and Ayrshire cattle have been successively called into being, and perpetuated or abandoned at the will of man. The favourite form, colour, or breed has been transferred to the remotest regions of the earth, and multiplied as the supplanters of their indigenous fauna. The sterile mule is annually produced by thousands, developing peculiar attributes and instincts, of singular value to man. Even fashion has exercised its influence; and with the demand for black, bay, chestnut, or grey horses, the stock-breeder has modified his supply. Butchery, reduced to an accredited craft in the shambles and markets of civilised man, has shocked the sensibilities of many: but it must not be overlooked that the droves of Smithfield owe their existence, no less than their destruction, to his will; and if it were possible that "vegetarian" enthusiasts could convert the civilised world to their herbivorous diet, the extinction of domesticated animal-life would only be prevented in so far as the milk of the cow and the wool of the sheep still supplied motives to man for their perpetuation.

The existence and condition of the coloured population of the Western Hemisphere most nearly approximate to those of the wild animals which have been domesticated, and modified in form and habits to meet the wants of civilised man. The African transported to America was as little a free agent as the horse or the hog, which multiplied there even beyond the wants of their transplanter. It is indisputable, moreover, that the coloured race was purposely multiplied for sale. But the horse, which has run free, has returned to the broad pampas, and resumed the wild life of

his Asiatic sire; while the African of Hayti, instead of resuming the savage life of his fatherland, has set up republics and empires, instituted ranks and titles, established churches and schools, and is even now striving towards law, order, and a more perfect civilisation. In truth, though the ethnologist does regard man as an animal, he must never lose sight of the fact that that animal is man. He cannot divest man of his moral nature, his reasoning faculties, his use of experience, his power of communicating knowledge by speech and writing, or his natural resort to artificial appliances at every stage of his being, from the rudest stone or flint tool of the savage, to the telescope, the steam-engine, the electric telegraph. On all those grounds, therefore, may we demur to the assumption that, even in relation to the laws affecting hybridity and the perpetuation of species, the principles applicable to animals generally, or to any specific species of animals, are therefore applicable to man.

The following are conclusions apparently involved in the opinions arrived at by Dr. Nott in relation to the mixture of white and Negro blood in the United States:—

1. The mulattoes and other grades of the coloured race may be assumed as the invariable offspring of white paternity. "It is so rare in this country," Dr. Nott remarks, "to see the offspring of a Negro man and a white woman, that I have never encountered an example; but such children are reported to partake more of the type of the Negro than when the mode of crossing is reversed."

2. The offspring of the Spanish or other dark-skinned European race and the Negro is hardier, more prolific, and therefore more likely to be permanent than that of Anglo-American paternity.

3. Mulattoes are less capable of undergoing fatigue and hardship than either the blacks or whites, and are the shortest-lived of any class of the human race.

4. Mulatto women are peculiarly delicate, and subject to

a variety of chronic diseases. They are bad breeders, bad nurses, liable to abortions, and their children generally die young.

5. Mulattoes, like Negroes, although unacclimated, enjoy extraordinary exemption from yellow fever when brought to Charleston, Savannah, Mobile, or New Orleans.

6. When Mulattoes intermarry they are less prolific than when connected either with the white or Negro stock; and all Mulatto offspring, if still prolific, are but partially so, and acquire an inherent tendency to run out, and become eventually extinct when kept apart from the parent stocks.

Assuming, for the sake of argument, that those conclusions are indisputable, they reveal a very remarkable series of results, when brought into comparison with data which the census supplies. The Superintendent of the Census of the United States for 1850 appears to have arrived at very different results when estimating the progressive increase of the slave and coloured population. Deriving his information from various sources, he set down the whole number of Africans imported at all times into the United States prior to 1850 at from 375,000 to 400,000.¹ At present their descendants, including those of mixed blood, number nearly 5,000,000. With every deduction for the influence of the pure stocks on such increase, in a country where intermarriage between the white and coloured races is almost unknown, it seems scarcely possible to reconcile such results with the idea of a race having within it the elements of disease, sterility, and inevitable extinction. Moreover, in estimating the full value of the previous summary of conclusions deduced from observed facts, one important admission must be taken into account. "I have found it impossible," observes Dr. Nott, "to collect such statistics as would be satisfactory to others, and the difficulty arises solely from the want of chastity among mulatto

¹ *Compendium of the Seventh Census of the United States*, p. 13.

women, which is so notorious as to be proverbial." This, and further remarks illustrative of the same statement, go far to neutralise the value of Nos. 3, 4, and 6; and to suggest totally different causes for the liability to disease, physical weakness, and sterility, of a race placed under such unfavourable circumstances either for moral or physical development. Sir Charles Lyell, in commenting on the affirmed relative intellectual capacity of the coloured race according to the predominance of white or black blood, adds: "It is a wonderful fact, psychologically considered, that we should be able to trace the phenomena of hybridity even into the world of intellect and reason." Yet it is not more wonderful than the familiar examples of transmitted intellectual characteristics from one or other parent of the same race, or the supposed influence of a superior maternal intellect on the corresponding mental faculties of distinguished sons. But it may be presumed that no one is prepared to maintain the monstrous doctrine that the profligacy of the southern mulattoes is an inevitable result of hybridity. Yet, unless such can be proved, the weakness, disease, and sterility of the mixed race is produced by the very same causes which have degenerated and brought to an ignoble end some of the royal lines and the most ancient blood of Europe.

Again, Dr. Nott discusses the possibility of gradual amalgamation merging the coloured into the predominant white race. It is admitted that, according to the assertion of both French and Spanish writers, when the grade of *quinteroon* is reached the Negro type has disappeared. So thoroughly has this been recognised that, by the laws of some of the West India Islands, this grade of descent was free. But, in commenting on this, Dr. Nott adds: "It must be remembered that the Spaniards and a certain portion of the population of France are themselves already as dark as any *quinteroon*, or even a *quadroon*, and thus it may readily happen that very few crosses would merge the dark into the lighter race."

Sir Charles Lyell speaks of having met in South Carolina some "mulattoes" whom he could not distinguish from whites. But against this Dr. Nott sets his experience of half a century, and adds: "I am not sure that I ever saw at the South one of such adult mixed-bloods so fair that I could not instantaneously trace the Negro type in complexion and feature." He accordingly affirms, as the only rational explanation, that "the mulattoes, or mixed breeds, die off before the dark stain can be washed out by amalgamation." But against opinions founded on such long experience, it may still be permissible to say that, supposing the descendant of mixed blood, quinteroon, sexteroon, or octeroon, to have reached that condition, which, in the West India Islands at least, is no abstract theory, of being no longer distinguishable from the white race, how is such descent to be detected? The freed man, thus emancipated from a degraded caste, is not likely to blazon the bend-sinister on his escutcheon. In my own experience I have seen in Canada several descendants of such mixed blood, who, still perhaps retaining such minute traces as the experienced eye of the author referred to would detect, yet could mingle without observation in any white assembly. In one case I have observed the eldest son of a white father and a mulatto mother in whom no casual observer could detect the slightest traces of the maternal blood; and who only betrays such in a complexion not darker than many of pure white descent. But this, it must be admitted, is not strictly an example of amalgamation, but an illustration of the predominance of the original pure stock; as is further shown by the return, in the case of younger members of the same family, not only to the true mulatto complexion, but to the crisp woolly locks of the African type. Nevertheless this white descendant of mixed blood, having married a white wife, has healthy offspring, betraying no traces of African blood. Another and more conclusive case which has come under my observation in Canada is that of

a young woman descended of white and coloured parentage, the mother being probably a quadroon, from her appearance. Her hair is long and flowing, her complexion good, and the only trace of Negro blood is in the eye, which I have observed both in the red and black hybrid is one of the most enduring traits of the darker blood.

Intellectually the mulattoes are declared to be intermediate between the blacks and the whites; and Sir Charles Lyell was informed in Boston, that the coloured children were there taught separately from the whites, not from an indulgence in anti-Negro feelings, but because "up to the age of fourteen the black children advance as fast as the whites; but after that age, unless there be an admixture of white blood, it becomes in most instances extremely difficult to carry them forward." But this is manifestly a mere evasion of distinctions traceable to the spirit of caste, which has led to separate coloured schools in Canada as well as in New England. If the Boston coloured children advanced with average intellectual capacity up to the age of fourteen, they must have completed their common school education; and only those who aimed at the Central High School, or Harvard College, could remain to compete with their white rivals. There need be no hesitation, however, in allowing *à priori* probabilities in favour of the intellectual inferiority of the coloured people of America as a class, notwithstanding striking exceptional examples of the reverse. So far as their blood is African, they are the descendants of an unintellectual and uncultured race; and in so far as they are the offspring of southern coloured blood, they are sprung from a people excluded from every source of intellectual or moral development; so that to expect the coloured American to stand up at once on a par with the Anglo-American—

"The heir of all the ages in the foremost files of time,"

is simply to expect grapes of thorns, and figs of thistles.

But the ethnological phenomena of the American continent invite to the consideration of other and totally distinct

questions from that of the mixed races which have resulted from the policy of the colonists of the New World. That the admixture of European or African with Indian blood, must result in the development of intermediate varieties, whether permanent or not, is a conclusion which all previous experience rendered probable. But propositions bearing on the whole question of man's migrations are also here subjected to practical tests. Do the climatic and other changes consequent on the transference of Europeans from the Eastern to the Western Hemisphere, without any admixture of blood, tend to develop new and permanent varieties? or is the geographical range of distinct types of man so absolutely determined as a law of nature, that the mere transference of such to another region involves their ultimate extinction? These are queries both of which have already been answered in the affirmative, from evidence derived from the data which phenomena attendant on the colonisation of America supply.

Among those who have maintained that the great experiment of transferring a population indigenous to one continent, and attempting to make of it the colonisers and permanent occupants of another continent, must inevitably end in failure, Dr. Knox takes a foremost part. After questioning the perfect acclimation of the horse, the ox, and the sheep, he proceeds to ask: "How is it with man himself? The man planted there by nature, the Red Indian, differs from all others on the face of the earth. He gives way before the European races, the Saxon and the Celt: the Celtiberian and Lusitanian in the south; the Celt and Saxon in the north. Of the tropical regions of the New World I need not speak; every one knows that none but those whom nature placed there can live there; that no Europeans can colonise a tropical country. But may there not be some doubts of their self-support in milder regions? Take the Northern States themselves. There the Saxon and the Celt seem to thrive beyond all that is

recorded in history. But are we quite sure that this success is fated to be permanent? Annually from Europe is poured a hundred thousand men and women of the best blood of the Scandinavian, and twice that number of the pure Celt; and so long as this continues he is sure to thrive. But check it, arrest it suddenly, as in the case of Mexico and Peru; throw the *onus* of reproduction upon the population, no longer European but native, or born on the spot; then there will come the struggle between the European alien and his adopted fatherland. The climate, the forests, the remains of the aborigines not yet extinct; last, not least, that unknown and mysterious degradation of life and energy which in ancient times seems to have decided the fate of all the Phœnician, Grecian, and Coptic colonies. Cut off from their original stock, they gradually withered and faded, and finally died away. Peru and Mexico are fast retrograding to their primitive condition; may not the Northern States, under similar circumstances, do the same?"¹ Such are the ideas formed on this subject by an English anatomist and physiologist; nor are they without support among those whose national predilections might have been presumed sufficient to preclude them from readily yielding acceptance to such opinions. Dr. Nott, after affirming that negroes die out, and would become extinct in New England if cut off from immigration, adds: "It may even be a question whether the strictly white races of Europe are perfectly adapted to any one climate in America. We do not generally find in the United States a population constitutionally equal to that of Great Britain or Germany; and we recollect once hearing this remark strongly indorsed by Henry Clay, although dwelling in Kentucky, amid the best agricultural population in the country."² Such an opinion must be the result of deep conviction before it could be publicly avowed by an

¹ *Races of Men*, p. 71.

² *Distribution of Animals and the Races of Men, Types of Mankind*, p. 68.

American writer, even though a necessary corollary from the general proposition he asserts relative to the origin and geographical distribution of animals and man.

The English anatomist, freed from all national sympathies or prejudices, deals with this idea of the degeneracy of the Transatlantic European, or the Euromerican as it may be convenient to call him, in still more uncompromising fashion: "Already," he exclaims, "the United States man differs in appearance from the European. The ladies early lose their teeth; in both sexes the adipose cellular cushion interposed between the skin and the aponeuroses and muscles disappears, or at least loses its adipose portion; the muscles become stringy, and show themselves; the tendons appear on the surface; symptoms of premature decay manifest themselves;"¹ and the conclusion he deduces is that these indicate "not the conversion of the Anglo-Saxon into the Red Indian, but warnings that the climate has not been made for him, nor he for the climate." The latter remark is the more noticeable from the singular though undesigned contradiction offered to it by another distinguished physiologist. Dr. Carpenter remarks, in his *Essay on the Varieties of Mankind*,² "It has not been pointed out, so far as the author is aware, by any ethnologist, that the conformation of the cranium seems to have undergone a certain amount of alteration, even in the Anglo-Saxon race of the United States, which assimilates it, in some degree, to that of the aboriginal inhabitants;" and after noting the peculiarities of New England physiognomy, he thus proceeds: "There is especially to be noticed an excess of breadth between the rami of the lower jaw, giving to the lower part of the face a peculiar squareness, that is in striking contrast with the tendency to an oval narrowing which is most common among the inhabitants of the old country. And it is not a little significant, that the

¹ *Races of Men*, p. 73.

² *Todd's Cyclopaedia of Anatomy and Physiology*, vol. iv. p. 1330.

well-marked change which has thus shown itself in the course of a very few generations, should tend to assimilate the Anglo-American race to the aborigines of the country: the peculiar physiognomy here adverted to, most assuredly presenting a transition, however slight, toward that of the North American Indian." Were the opinions thus confidently affirmed borne out by my own observations, I should be tempted to assign to some admixture of red blood, as already adverted to in a former chapter, a share at least in so remarkable a transition from the European to the American type of man. But I can scarcely imagine any one who has had abundant opportunities of familiarising himself with the features of the Indian and the New Englander, tracing any approximation in the one to the other. Nevertheless the physiognomical and physical characteristics of the New Englander are subjects of study of the highest importance to the ethnologist.

The evidence supplied by ancient monuments, and especially by the sculptures and paintings of Egypt, of the undeviating character of some of the most remarkable existing types of man, has been frequently employed as an argument in favour of the permanency of types, and consequently of the essential diversity and multiplicity of human species; and it has been confidently asked,—“If all the different races of man are indeed only varieties of one species, how is it that no well-ascertained variety has originated within historic times?” It is, therefore, a fact of the utmost value, if it be true that in the New Englander or Yankee, we have such a variety unmistakably presented to us. His history is well known. Two hundred and fifty-five years ago, the little “Mayflower” landed on the bleak shores of New England the pioneers of civilisation. They came of a noble old stock, and brought with them the sturdy endurance of the Saxon, and the lofty spirit of the Christian patriot; and the self-denial, the daring, and the stern endurance of the Pilgrim Fathers, were needed on

that bleak December day of the year 1620, when the little band were landed on Plymouth Rock, to make for themselves a home and a country in the forest wilderness. Now, after an interval of two centuries and a half, it is acknowledged on all hands that the New Englander differs in many respects very unmistakably from the Old Englander. Dr. Knox, whilst admitting it, solves the difficulty by classing him with the degenerate Spaniard of Mexico and Peru, already hastening, as he conceives, to speedy extinction. But the Mexican of Spanish descent scarcely differs more widely, in his degeneracy, from the conquistador of Cortez, than does the modern Spaniard from the proud subject of Charles v. The causes of the degeneracy of both are patent to all, and lie to a great extent apart from questions of climate or geographical distribution. But, as we have seen, Dr. Knox further affirms that the New Englander already manifests symptoms of premature decay; and Dr. Nott, a native American, admits that his countrymen are constitutionally inferior to those of Germany or Great Britain. The latter statement is consistent with every probability, on a continent which, in the Northern States, combines the extremes of temperature of Naples and St. Petersburg. But even in this respect the New Englander is unusually favoured with the cooling breezes and the equalizing temperature of the Atlantic, tempering his northern latitudes, and exposing him to less violent extremes of heat or cold; and all experience disproves this theory of physical degeneracy and decrepitude. He is proverbial for his energy, acuteness, and intellectual vigour. The homes of New England approximate to those of the mother country in their genial, domestic attractions; and yet the enterprising Yankee is as indefatigable a wanderer as the Scot. So thoroughly is he the type of American enterprise, that even among the Indians on the North Pacific coast, where a strange *lingua Franca* has been developed as the means of intercourse between natives and whites, the designation

for an American is *Boston*, derived from the capital of the State of Massachusetts. And, while he is thus known on the remote Pacific shores; the New England States reveal everywhere evidence of indomitable perseverance, successful industry, and the proofs of its older settlements progressing under the same energy and patience which have united to make England what she is. Nevertheless, it is most true, that it is easy for any one familiar with the New England physiognomy to point out the Yankee in the midst of any assemblage of Englishmen. He furnishes the required example of a new variety of man produced within a remarkably brief period of time, by the same causes which have been at work since man was called into being, and scattered abroad to people the whole earth. If intermixture of blood has contributed any share in the development of such a physical change, that has been the invariable consequent of all colonisation of previously peopled regions. If it be further ascribed to changes of climate, diet, habits, occupation, and intellectual training, all these have been in operation wherever man has wandered forth to seek a new and distant home in the wilderness. And if two centuries in New England have wrought such a change on the Englishman of the seventeenth century, what may not twenty centuries effect? or, what may be the ultimate climatic influences of Canada, the Assinaboine Territory, or Fraser's River; of Utah, California, or the States on the Gulf?

It is only some twelve centuries since the Angle and Saxon migrated as foreign intruders to England, where a remnant of the elder native race still speak, in their ancient British language, of the *Sacsonach* as strangers. The transmigration, though from a nearer coast than that of their New England descendants, was a maritime one, and the change involved in the transfer to the peculiar insular climate of England was not inconsiderable. The Englishman of the present day is distinguishable from all his continental Germanic congeners, and is himself a type of

comparatively recent origin. Moreover, the Englishman of the genuine English and Saxon districts to the south of the Humber, is a markedly distinct type from the northern race, from the Humber to the Moray Firth ; while again, in the Orkney Islands, the descendants of its Norse colonists of the ninth and tenth centuries, not only retain distinctive physical characteristics ; but their inherited maritime instincts and enterprise are so universally recognised, that the English as well as Scottish Greenland fleets annually strive to complete their crews at Kirkwall, before proceeding to the northern seas. The Orkney mariner and fisherman in his island home is exposed to the utmost violence of the northern sea ; and in navigating the Pentland Firth, has to cross a strait swept by the currents, and subject to the tempests, of the Atlantic and German oceans. But that this alone would not make a seaman of him, is proved by the proverbial disinclination to all maritime daring of the hardy Celtic population of the Hebrides and the west of Ireland.

It is in such minute ethnology that the truths of the science must be sought. The simplicity of such systems as that of Blumenbach, with his five human species ; of Pickering, with his eleven races of men ; or Borey de St. Vincent, with his fifteen species ; or again of Virey, who can overcome all difficulties if allowed two distinct human species ; and of Morton, who, for the whole American continent, from the Arctic circle to Cape Horn, admits of only one type of man : is exceedingly plausible and seductive. When we place alongside of each other Blumenbach's typical Caucasian, Mongolian, Malay, Ethiopian, and American, the physical differences are striking and indisputable ; but when we come to examine more minutely, the Caucasian region of Europe has its fair and its dark-skinned races ; the little island of Britain has its three, four, or five distinct types ; and it seems probable at last, that if we must divide mankind into distinct species, we may find that not five,

but five hundred subdivisions, will fail to meet all the demands of extended observation. Well-defined types have perished, and new ones have appeared within the historic period ; and if all the intermediate links between one and another of the great subdivisions of the genus *homo* cannot now be found, the causes for their disappearance are sufficiently manifest. Nevertheless, the science has still many difficult questions to solve. The physical differences between the dark woolly-haired negro and the blue-eyed, fair-haired, Anglo-Saxon, are great, but not greater than those other distinctions pertaining to language by means of which diverse races classify themselves.

On ancient historic sites along the shores of the same Indian Ocean have been recovered the highly-inflected Sanscrit, with its wonderful richness of grammatical forms, its eight cases, its six moods, and its numerous suffixes ; and the monosyllabic Chinese, devoid of all inflections, or even what seem to us any grammatical forms. But in the history of the Romance languages, we see how curiously, first by a process of degradation, and then of reconstruction, a whole group of new languages has sprung from the dead parent stock, presenting diversities so great as those which distinguish the ancient Latin from the modern French. Moreover, we witness, on the native area of the monosyllabic Chinese, our own vernacular tongue actually passing through the first transforming stages, in the "Pigeon English" of Hong-Kong and Canton. Its name, *pigeon*, an apt illustration of its vocabulary, is the Chinaman's pronunciation of the word *business*. Mr. James H. Morris, a recent Canadian visitor to China, remarks : "This language has become a regular dialect, and, when first heard, it would appear as though the speaker was parading indiscriminately a few English words before his hearer, whose duty it was to make a meaning out of them. A foreign resident will introduce a friend to a Chinese merchant as follows : *Mi chinchin you, this one velly good flin belong mi ; mi wantchie you do*

plopel pigeon along he all same fashion along mi; spose no do plopel pigeon, mi flin cum down side mi housie, talke mi so fashion mi kick up bobbery along you. To which the Chinaman will reply:—Mi savey no casion makery flaid; can secure do plopel pigeon long you flin all same fashion long you." This language is as simple as it seems absurd; but the words must be arranged as the Chinaman has been accustomed to hear them, or he will not understand what is said. It is spoken in all the ports of China open to foreign trade, and there is no disposition to adopt a purer one.

The languages of Europe are undergoing, on the American continent, the very same process of degradation and reconversion into new dialects and languages. The Negro-French is stripped of all its grammatical richness, and simplified into a dialect scarcely intelligible to a Parisian; and Negro-English, though checked in its progress of degradation by constant contact with the vernacular tongue, has dropped many of its inflections, altered the irregular tenses in defiance of euphonic laws, and modified the vocabulary in a manner that only requires complete isolation to beget a distinct dialect, and ultimately a new language. Mr. William H. Hodgson, of Savannah, Georgia, showed me a remarkable illustration of this. It consisted of portions of the Scriptures written by a native African slave, in Negro *patois* and in Arabic characters. The writing was executed with great neatness, but a more puzzling riddle could scarcely be devised to tax the ingenuity of the Semitic scholar. In Lower Canada, also, French is already written and spoken with many English idioms, and with modified terms of English or Canadian origin. But it is on the North Pacific coast that the most remarkable example of the development of a new language out of the commingling English and native vocabularies, is now in progress. Mr. Paul Kane, during his travels in the North-west, resided for some time at Fort Vancouver, on the Columbia river, and

acquired the singular *patois*, styled the Oregon jargon, which is there growing into a new language. The principal tribe in the vicinity is the Chinook, a branch of the Flat-head Indians, whose native language so entirely baffles all attempts at its mastery, that it is believed none have ever attained more than the most superficial knowledge of its common utterances but those who have spoken it from childhood. Pickering remarks, on his approach to the Straits of De Fuca, "After the soft languages and rapid enunciation of the Polynesians, the Chinooks presented a singular contrast, in the slow, deliberate manner in which they seemed to choke out their words, giving utterance to sounds some of which could scarcely be represented by combinations of known letters." After hearing its utterances as spoken for my behoof by more than one traveller, I can only compare them to the inarticulate noises made from the throat, with the tongue against the teeth or palate, when encouraging a horse in driving. Mr. Kane stated in reference to it, "I would willingly give a specimen of the barbarous language were it possible to represent by any combination of our alphabet the horrible, harsh, spluttering sounds which proceed from the throat, apparently unguided either by the tongue or lips."

Recent years have witnessed a marvellous revolution on the Pacific coasts, where the province of British Columbia has been organised out of the old territory of the Hudson's Bay Company. Fort Vancouver is still the largest of all the Company's posts, and has frequently upwards of two hundred voyageurs with their Indian wives and families residing there, besides the factors and clerks. A perfect Babel of languages is to be heard amongst them, as they include a mixture of English, Canadian-French, Chinese, Iroquois, Hawaiian, Cree, and Chinook. The Fort is visited for trading purposes by Walla-wallas, Klickatats, Kalapurgas, Klackamuss, Cowlitz, and other Indian tribes; and hence the growth of a *patois* by which all can hold inter-

course together. The English, as it shapes itself on the lips of the natives, forms the substratum; but the French of the voyageurs has also contributed its quota, and the remainder is made up of Nootka, Chinook, Cree, Hawaiian, and miscellaneous words, contributed by all to the general stock. The common salutation is *Clak-hoh-ahyah*, which is believed to have originated from their hearing one of the residents at the Fort, named Clark, frequently addressed by his friends: "Clark, how are you?" The designation for an Englishman is *Kint-shosh*, i.e. King George; while an American is styled *Boston*. *Tala*, i.e. dollar, signifies silver or money; *oluman*, i.e. old man, father, etc. The vocabulary as written, shows the changes the simplest words undergo on their lips: e.g. fire, *paia*; rum, *lum*; water, *wata*; sturgeon, *stutshin*; to-morrow, *tumola*; cold, *kol*; suppose, *pos*; wood, or a tree, *stik*; dry, *tlai*, etc. And the French in like manner: la médecine becomes *lamestin*; la grasse, *lakles*; courir, *kuli*; la langue, *lalan*; les dents, *litan*; sauvage, *sawash*, i.e. Indian; la vieille, *lawie*, etc. The formation of the vocabulary appears to have been determined to a great extent by the simplicity or easy utterance of the desired word in any accessible language, or familiar imitative sound. As to the grammar: number and case have disappeared, and tense is expressed by means of adverbs. Nouns and verbs are also constantly employed as adjectives or prefixes, modifying other words; and are further increased, not only by borrowing from all available sources, but by the onomatopœic process, that natural source of growth in all primitive languages. Thus we have *moo-moos*, an ox, or beef; *kalakala*, a bird; *kwehkweh*, a duck; *tiktik*, a watch; *tingling*, a bell; *hehe*, laughter; *tumtum*, the heart; *tum-tumb*, or *tum-wata*, a waterfall; *klak*, let go, or the sound of a rope suddenly loosed; *mash*, the sound of anything falling; *olo*, hungry, thirsty; *tsish*, cold; *wawa*, to speak; *pah*, to smoke; *poo*, to shoot; *mok-e-mok*, to eat or drink; *liplip*, to boil. Nor

is this patois a mere collection of words. Mr. Kane informed me, that by means of it he soon learned to converse with the chiefs of most of the tribes around Fort Vancouver with tolerable ease. The common question was: *cachamikha chacha*, where did you come from? and to this the answer was: *sēy-yaw*, from a distance; but in this reply the first syllable is lengthened according to the distance implied, so that in the case of the Canadian traveller he had to dwell upon it with a prolonged utterance, to indicate the remote point from whence he came. This stress of voice, or prolongation of the sound, modifies many words and phrases; e.g. *haiās*, great, with the last syllable drawn out, becomes exceedingly great; *ānakati*, with the first syllable prolonged, signifies very long ago; and the transition from the positive to the superlative degree is wrought by similar means, on *haiak*, quick; *haiu*, many; *tanās*, little, young, or a child; etc. Traces even of an inflectional process are observable; e.g. *iakiwa*, on this side; *iawa*, on that side; *matlini*, near the river; *matlkwili*, inland, or away from the river; *milkoi*, to stand; *mitlait*, to sit, or reside; etc. The pronouns are *neiki*, I; *mikha*, thou; *yahka*, he; *musaika*, we; *nusaika*, ye; *klaska*, they; as, *neiki mok-e-mok tschuck*, I drink water; *kata nem mikha papa*, what is the name of your father? But accent and varying emphasis modify the sense in which the words are to be understood; and the relation of words in a sentence, or their case, tense, etc., is determined by their position, as in the Chinese. Mr. Hale, the philologist of the United States Exploring Expedition, remarks in reference to the Indians and voyageurs on the Columbia river: "The general communication is maintained chiefly by means of the *jargon*, which may be said to be the prevailing idiom. There are Canadians and half-breeds married to Chinook women, who can only converse with their wives in this speech; and it is the fact, strange as it may seem, that many young children are growing up to whom this factitious

language is really the mother-tongue, and who speak it with more readiness and perfection than any other."

Thus in all ways are the emigrants from the Eastern Hemisphere making a new world of the West. The face of the country, its fauna and flora, with man himself, his habits, arts, and languages, are all being modified, effaced, displaced. Whatever be the fate of the intrusive races, they have wrought mightier changes in two centuries, than it is probable the American continent witnessed for twenty centuries before. The rapidity, indeed, with which such changes now take place strikes the onlooker with astonishment, and is inconceivable to those who have not witnessed it for themselves. In 1841, the "Vicennes," fresh from exploring the islands and coasts of the Southern Ocean, entered the Straits of De Fuca, and Dr. Pickering describes his impressions on landing. The maritime skill of the Chinooks, their eagerness for traffic, and the striking quietness of their movements, all excited his interest. They had some of the usual forbidding habits natural to savage life; but he adds, "they appeared to live, as it were, on a good understanding with the birds and beasts, or as if forming part and parcel of the surrounding animal creation: a point in correspondence with an idea previously entertained, that the Mongolian has peculiar qualifications for reclaiming, or reducing animals to the domestic state." But all was strange, wild, and savage. The broad continent lay between those Pacific coasts and the seats of civilisation on its eastern shores; and standing in the midst of a temporary Indian encampment, and surrounded by all the rude details of savage life, he exclaims: "Scarcely two centuries ago, our New England shores presented only scenes like that before me; and what is to be the result of the lapse of the third?" Upwards of a quarter of a century has passed since then. The town of Victoria is rising on Vancouver Island, that of New Westminster in British Columbia; and the *British Colonist*, the *Mainland Guardian*, and other broad-

sheets of the North Pacific coast already tell of the printing press in full operation, where so recently the Indian trail and the wigwam of the savage were the sole evidences of the presence of man. The mineral wealth of Fraser's River has attracted thousands to the new province. The clearing, the farm, and the industrious settlement have displaced the ephemeral lodges of the Indian ; and are rapidly superseding the no less ephemeral shanties of the gold diggers. The Customs' receipts of the colony of British Columbia in recent years have been estimated at nearly £80,000 sterling ; and the total exports to the United Kingdom alone in 1871 amounted to £76,644. The senators and representatives of the colony share in the deliberations of the Canadian Parliament at Ottawa ; and the Pacific Railway is in progress, which is to place the provinces beyond the Rocky Mountains in direct communication with Toronto, Montreal, and Halifax.

The progress of a single year outspeeds the work of past centuries. Amid the charred stumps and the rough clearings of the young settlement, fancy traces, not obscurely, the foundations of future states and empires, and the ports of the merchant navies of the Pacific destined to unite America to Asia, as America has been united to Europe. Already the indomitable enterprise of the intruding races has planned the route of overland travel, and even now railways are extending westward towards the Rocky Mountains. Explorers are surveying their defiles for the fittest passage through which to guide the snorting steam-horse and all the wonderful appliances by which the triumphs of modern civilisation are achieved. If such victories were only to be obtained, like those of the first Spanish colonists of the New World, by the merciless extermination of the Indian occupants of the soil, it would be vain to hope for the endurance of states or empires thus founded in iniquity ; but if, by the intrusion of the vigorous races of Europe, smiling farms and busy marts are to take the place of the

tangled trail of the hunter and the wigwam of the savage ; and the millions of a populous continent, with the arts and letters, the matured policy, and the ennobling impulses of free states, are to replace scattered tribes living on in aimless, unprogressive strife : even the most sensitive philanthropist may learn to look with resignation, if not with complacency, on the peaceful absorption and extinction of races who accomplish so imperfectly every object of man's being. If the survivors can be protected against personal wrong ; and, so far as wise policy and a generous statesmanship can accomplish it, the Indian be admitted to an equal share with the intruding coloniser, in the advantages of progressive civilisation : then we may look with satisfaction on the close of that long night of the Western World, in which it has given birth to no science, no philosophy, no moral teaching that has endured ; and hail the dawn of centuries in which the states and empires of the West are to bear their part in the accelerated progress of the human race.

CHAPTER XXIV.

MIGRATIONS.

AMERICAN ETHNOLOGY—AMERICAN MONOSYLLABIC ROOTS—SYNTHETIC ELEMENT OF LANGUAGE—POLYNESIAN AFFINITIES—ANALOGIES TO ASIATIC LANGUAGES—ORIGIN OF CULTURE—SOURCES OF POPULATION—CARD MODE OF SPEECH—INDICATIONS OF MIGRATIONS—REMOVED AFFINITIES—CURRENTS OF MIGRATION—ESQUIMAUX INFLUENCE—UNCULTURED LANGUAGES—GENERIC TERMS—ABSTRACT ROOTS—ANALOGICAL NAMES—WILD MEN—NAME-GIVING—ONOMATOPEIC TERMS—IMITATIVE NAMES—PRIMITIVES—THE EGYPTIAN TRUTH—INDIAN DESCRIPTIVE NAMES—PROCESSES OF SELECTION—NEW ROOT-WORDS—GROWTH OF LANGUAGE—IMITATIONS OF NATURAL SOUND—INDIAN ONOMATOPEIA—NAMES OF SOUNDS—INTERJECTIONAL WORDS—PRIMITIVE VOCABULARIES—COMMON ROOTS—ACCIDENTAL CORRESPONDENCE—AGASSIZ ON LANGUAGE—TENTS OF RACE—CRIES OF ANIMALS—ACQUIRED SPEECH—ORIGIN OF LANGUAGE—LOCAL ROOT-WORDS—GROWTH OF PATOIS—OCEANIC MIGRATIONS—TRACES OF MEXICAN INFLUENCE—PURITY OF RACE—INTELLECTUAL INTERCHANGES—ROUTES OF MIGRATION—²ARCTIC FAUNA.

WHENCESOEVER the man of the New World is derived, enough has been produced to show that he is no recent intruder there. In the amplest sense of the term, we are able to trace out many glimpses of him in prehistoric eras, replete with illustrative significance in reference to the whole human race; and in some respects, America, in its present condition of native, intruded, and hybrid races, offers a field of study to the ethnologist, surpassing in value anything to be found elsewhere. Its ethnology is simpler than that of Europe or Asia. Its native and its intruded races are clearly defined and well-determined; and its languages stand apart alike from the dead and the living tongues of the Ancient World.

This simplicity, however, may be more apparent than real. Our knowledge of history prevents our under-estimating Pelasgian or Etruscan, Basque, Magyar, or Celtic elements

of diversity. Ignorance may be the cause of our overlooking or under-estimating diversities among American languages as great as the German and Euskara, or the Sanscrit and the Chinese. America, indeed, has its monosyllabic Otomi and Mazahui, with their analogies to the Chinese, and their seemingly radical contrast to that polysynthetic structure which appears to be as predominant throughout the New World as Aryan affinities are characteristic of the languages of Europe. But we scarcely know yet how justly to estimate the amount of difference. Schoolcraft affirmed, as the result of his analysis of the Algonquin dialects, that they betray evidence of having been built up from monosyllabic roots. If this be indeed demonstrable in any other than the vague sense in which it may be stated of every tongue, the same conclusion will apply to other American languages. Nearly all the Chippewa root-words, he observes, are of one or two syllables; and Gallatin has shown that the same may be affirmed to a great extent of the Mexican, if the pronominal adjuncts and the constantly recurring terminations are detached from the radix. But the polysyllabic characteristics of the Algonquin exceed even those of the Esquimaux. Holophrasms are common in all its dialects, compounded of a number of articulations, each of which is one of the syllables of a distinct word; and the whole undergoes grammatical changes as a verbal unit. This, therefore, is a condition widely diverse from that of the monosyllabic languages, even where, as in the Otomi, many compounded words occur in the vocabulary. But after making every allowance for unknown nations and tongues, and misinterpreted or unappreciated elements of difference among the varieties of man in the New World, the range of variation appears to extend over a smaller scale than that of Europe or Asia, or even of Africa; while man is everywhere found there under less diversified modifications of civilised or savage life than on the old historic continents.

The original centres of population may have been manifold; for the evidence of the lengthened period of man's

presence in America furnishes abundant time for such operations of climatic influences, direct or indirect intercourse, or even positive intermixture, to break down strongly-marked elements of ethnic diversity. Nevertheless, after carefully weighing the various kinds of evidence which have been glanced at in previous chapters, they all seem to resolve themselves into three great centres of propagation, of which the oldest and most influential belongs to the southern and not to the northern continent. The routes originally pursued in such immigrations may have been various, and it is far from impossible that both southern and northern immigrants found entrance to the continent by the same access. Such, however, is not the conclusion to which the previous investigations appear to me to point. If we adopt the most favoured theory, that the New World has been entirely peopled from Asia, through Behring Strait, then the Patagonian should be among the oldest, and the Esquimaux the most recent of its immigrant occupants. But that which seems theoretically the easiest is by no means necessarily the most probable course of migration ; and many slight indications combine to suggest the hypothesis of a peopling of South America from Asia, through the islands of the Pacific.

The tendency of philological inquiry, as directed to the peculiar grammatical structure and extreme glossarial diversities of the American languages, was at first to exaggerate their special phenomena into widely prevalent linguistic features, common to the New World and utterly unknown elsewhere. In this the philologist pursued the same course as the physiologist, the attention of each being naturally attracted chiefly by what was dissimilar to all that had been observed elsewhere. But as physiological disclosures prove less conclusive in the support they yield to the favourite theory of an essential diversity for the American man ; so also increasing knowledge of his languages tends to diminish the proofs of that radical difference from all other forms of human speech which was

at first too hastily assumed. The synthetic element of structure, though very remarkable in the extent of its development, has many analogies in ancient languages, and is embraced in the grammatical process of all inflectional tongues. But beyond this, important elements of relationship appear to be traceable between languages of America and those of the Polynesian family. Gallatin early drew attention to certain analogies in the structure of Polynesian and American languages as deserving of further investigation; and pointed out the peculiar mode of expressing the tense, mood, and voice of the verb, by affixed particles, and the value given to place over time, as indicated in the predominant locative verbal form. The substitution of affixed particles for inflections, especially in expressing the direction of the action in relation to the speaker, is common to the Polynesian and the Oregon languages, and also has analogies in the Cherokee.¹ Subsequent observations, though very partially prosecuted, have tended to confirm this idea, especially in relation to the languages of South America, as shown in their mode of expressing the tense of the verb; in the formation of causative, reciprocal, potential, and locative verbs by affixes; and the general system of compounded word-structure. The incorporation of the particle with the verbal root appears to embody the germ of the more comprehensive American holophrasms. But here again, while seeming to recover links between Polynesia and South America, we come on the track of affinities no less clearly Asiatic. Striking analogies have been recognised between the languages of the Deccan and those of the Polynesian group, in which the determinate significance of the formative particles on the verbal root equally admits of comparison with peculiarities of the American languages. On this subject the Rev. Richard Garnett remarks that most of the languages of the American continent respecting which definite information has been acquired, bear a general analogy alike to the Polynesian family and the languages

¹ *American Ethnological Transactions*, vol. ii. p. cliv.

of the Deccan, in their methods of distinguishing the various modifications of time; and he adds: "We may venture to assert in general terms that a South American verb is constructed precisely on the same principle as those in the Tamul and other languages of Southern India; consisting, like them, of a verbal root, a second element defining the time of the action, and a third denoting the subject or person."¹ Such indications of philological relation of the islands of the Polynesian archipelago and the American continent to Southern Asia, acquire an additional interest when taken in connection with remarkable traces of megalithic sculpture and of ancient stone structures in the Pacific, long ago noted by Captain Beechey on some of the islands nearest to the coasts of Chili and Peru, and more recently observed on Bonabe and other islands lying off the Asiatic shores. Some of those have already been referred to in their general bearings on oceanic migration; and on the probability of an era of insular civilisation, during which maritime enterprise may have been carried out on a scale unknown to the most adventurous of modern Malay navigators.

The affinities recognisable between Polynesian and American arts manifestly belong to a remote past; and the character of such philological relations as have been indicated fully accord with this. The direct relationship of existing Polynesian languages is not Mongol but Malay; and this is for the most part so well defined as to indicate migrations from the Asiatic continent to the islands of the Pacific at periods comparatively recent; whereas the diversity of those of America, and their essentially native vocabularies, prove that the latter have been in process of development from a remote period free from all contact with tongues which, as we see, were still modelling themselves according to the same plan of thought in the clustering islands of the Pacific. But the American languages present a widely diversified field of study scarcely yet fairly entered upon; while their peculiar complexities, when considered in rela-

¹ *Proceedings of the Philological Society*, vol. i. p. 271.

tion to nations broken up into numerous unlettered and nomade tribes, and with no predominant central nationality, seem to afford such facilities for ever-changing combinations, that the difficulty of determining their radical elements is greatly increased in any attempt to compare their old and modern forms. Two languages, however, seem to invite special study, in addition to that of Mexico. The Maya, which presents striking contrasts to it in its soft, vocalic forms, has already been referred to as that to which we are attracted by some apparent relations to the remarkable antiquities, and the possible surviving civilisation, of Central America ; while the Quichua was the classical language of South America, the richly-varied and comprehensive tongue, wherein, according to its older historians, the poets of Peru incorporated the national legends, and which the Incas vainly strove to make not only the Court language, but the medium of all official intercourse, and the common speech of their extended empire. To those cultured languages of the New World attention is now directed. In searching for the origin of such culture in America, Mr. Hyde Clarke employs philology as his chief guide, though supplementing it with mythological and archæological evidence. He takes the newly-deciphered cuneiform Accad for the typical language of his Sumerian class. This he assumes to have started probably from High Asia, and to have passed on to Babylonia ; while another branch diffused itself by India and Indo-China ; and thence traversing the Pacific by Easter Island, finally reached America. An elder influence, related to the Agaw of the Nile region, he conceives to have preceded it ; and to be traceable in South America as Guarani, Omagua, etc. This the Sumerian migration displaced, founding the Aymara domination in Peru, and that of the Maya in Yucatan. To a second wave, which probably supplied the Siamese and other languages of Indo-China, he would trace the Quichua in Peru, and the Aztec in Mexico. Here, at any rate, are glimpses of the lines of

research which are looked to as probably furnishing a clew to ancient relations between the Old World and the New.

From some one of the early centres of South American population, planted on the Pacific coasts by Polynesian or other migration, and nursed in the neighbouring valleys of the Andes in remote prehistoric times, the predominant southern race diffused itself, or extended its influence through many ramifications. It spread northward beyond the Isthmus, expanded throughout the peninsular region of Central America, and after occupying for a time the Mexican plateau, it overflowed along either side of the great mountain chain, reaching towards the northern latitudes of the Pacific, and extending inland to the east of the Rocky Mountains, through the great valley watered by the Mississippi and its tributaries. It must not, however, be supposed that such a hypothesis of migration implies the literal diffusion of a single people from one geographical centre. There is as little reason for designating either the Toltecs or the Mound-Builders Peruvians, as for calling the Iranian Indo-Germans Greeks. But many archaeological traces seem to indicate just such affinities between the former as have been suggested by the philological relations of the latter.

Thus far we have chiefly regarded the traces of oceanic migration by the southern Pacific route. But, while its island groups appear to furnish facilities for such a transfer of population to the New World as evidence of various kinds tends to confirm: it seems scarcely to admit of doubt that the Canary Islands were known to the ancients; and that by Madeira and the Azores, on the one hand, and by the Cape Verde Islands, on the other, the Antilles and Brazil may have become centres of diverse ethnological elements, and also of distinctive arts and customs of the western hemisphere. The Carib race, which was the predominant one in the lesser Antilles, and occupied extensive regions of the mainland toward the southern Atlantic seaboard,

differed very strikingly, alike in mental and physical characteristics, from the races of Central and of North America, and still more so from those with whom they came in contact in the larger islands. Traces of words common to the Colfachi of Florida and the insular Caribs are probably the sole grounds for the tradition of a North American origin for the latter; though in cranial conformation their analogies are with the northern dolichocephalic nations.

Dr. Latham, in his *Varieties of Man*, refers to a remarkable peculiarity in the language of the Caribs, namely, that certain objects have two names, one of which is applied by males, and the other by females only. In this he recognises an affinity to certain Polynesian characteristics traceable to the language of caste and ceremony; though he offers another explanation for it. The female terms are affirmed to be Arawak; and it is assumed that the Caribs intruded on the insular Arawaks, exterminated the males, and adopted the women as wives. Hence the different names in use by the men and women for the same objects. But the Arawak mothers would be the teachers of their children. Such an admixture of races has occurred in every age of the world, with no such results; and the theory very unsatisfactorily accounts for a philological phenomenon by no means limited to the Carib among the languages of America. Grammatical gender presents itself in exceedingly diverse aspects. In our own modern English it has well nigh disappeared; in the ancient Saxon, as in the Latin, it affected noun, pronoun, and adjective, and modified them through all their declensions; in the linguistic feature thus found common to certain Polynesian and South American languages, gender is carried to the utmost extent, and not only modifies the forms of speech applicable to the sexes, but those in use by them. It is in this direction that the peculiarities analogous to true gender have been developed in widely different American languages. The general mode of expressing sex for the lower animals, alike among the

northern Indians, and in the languages of Mexico and Central America, is only by prefixing another noun to their names, equivalent to our use of "male" and "female," or "he" and "she." But the employment of distinct terms expressive of difference of sex in the human species is carried to an extent unknown in ancient or modern European languages; and separate adjectives are employed to express qualities, such as size, form, proportion, etc., from those which define the same attributes of inanimate objects, and even of the lower animals. In closing his analysis of the Huasteca language, along with others spoken in Central America, Gallatin remarks on an abbreviated mode of speech noted by Father Tapia Zenteno as in use by the women, and adds, "Here, as amongst all the other Indian nations, the names by which they express the various degrees of kindred differ from those used by men."

Polynesian affinities are least of all to be looked for in the Antilles, or on the coasts of Venezuela and Guiana, where alone the Caribs and Arawaks are still to be found. There, if anywhere, we have to look for traces of a western emigration, by the Cape Verde, the Canary Islands, or the Azores, to the West Indian Archipelago; and consistently with this, other philologists—and foremost among them, Mr. Hyde Clarke,—directly trace the Carib, and other languages of South America, including those of the Guarani, the great family of Brazil, and of the Omaguas who have been styled the Phœnicians of the New World: to such a source. In all of them a similarity is recognised, in roots and grammar, to the Agaw of the African Nile region.

The cranial characteristics of the Caribs have already been referred to. They are essentially dolichocephalic; and the predominance of such configuration throughout the American Archipelago has been made the basis of important ethnological deductions. Retzius especially has recorded the opinion that, while he conceives the Tongusian skull to form a clearly recognised link between those of the Chinese

and the Esquimaux; the other primitive dolichocephali of America are nearly related to the Guanches of the Canary Islands, and to the populations of Africa, comprised by Dr. Latham under subdivisions of his *Atlantidæ*. The migrations which such affinities would indicate have already been referred to as altogether consistent with the probabilities suggested by the course of ancient navigation; and if early Mediterranean voyagers found the Antilles uninhabited, the genial climate and abundant natural resources of those islands peculiarly adapted them to be the nurseries of such germs of colonisation for the neighbouring continent.

But independent of all real or hypothetical ramifications from southern or insular offsets of oceanic migration, some analogies confirm the probability of a portion of the North American stock having entered the continent from Asia by Behring Strait or the Aleutian Islands; and more probably by the latter than the former: for it is the climate that constitutes the real barrier. The intervening sea is no impediment. In a southern latitude, such a narrow passage as Behring Strait would have been little more interruption to migration than the Bosphorus between Asia and Europe; and in its own latitude it is annually bridged by the very power that guards it from common use as a highway of the nations, and is thus placed within easy command of any Samoyed or Kamtchatkan sleighing party. It is, indeed, a well-authenticated fact, that the Russians had learned from native Siberians of a great continent lying to the east of Kamtchatka, long before Vitus Behring demonstrated that the western and eastern hemispheres so nearly approach, that the grand triumph of Columbus could be performed by the rudest Namollo in his frail canoe.

In this direction, then, a North American germ of population may have entered the continent from Asia, diffused itself over the North-west, and ultimately reached the valleys of the Mississippi, and penetrated to southern latitudes by a route to the east of the Rocky Mountains. Many

centuries may have intervened between the first immigration, and its coming in contact with races of the southern continent; and philological and other evidence indicates that if such a north-western immigration be really demonstrable, it is one of very ancient date. But so far as I have been able to study the evidence, much of that hitherto adduced appears to point the other way. Charlevoix, in his essay on the Origin of the Indians, states that Père Grellon, one of the French Jesuit Fathers, met a Huron woman on the plains of Tartary, who had been sold from tribe to tribe, until she had passed from Behring Strait into Central Asia. By such intercourse as this incident illustrates, it is not difficult to conceive of some intermixture of vocabularies; and that such migration has taken place to a considerable extent is proved by the intimate affinities between the tribes on both sides of the Strait.

The Esquimaux occupy a very remarkable position as a double link between America and Asia. Extending as they do in their detached and wandering tribes across the whole continent, from Greenland to Behring Strait, they appear, nevertheless, as the occupants of a diminishing rather than an expanding area. When the first authenticated immigration from Europe to America took place in the eleventh century, it was with Esquimaux that the Scandinavians of Greenland, and apparently even the discoverers of Vinland were brought in contact. If the Scraelings of New England at that comparatively recent date were indeed Esquimaux, it is the clearest evidence we have of the recent intrusion of the Red Indians there. When the sites of the ancient Norse colonies of Greenland were rediscovered and visited by the Danes, they imagined they could recognise in the physiognomy of some of the Esquimaux who still people the inhospitable shores of Davis Straits, traces of admixture between the old native and Scandinavian or Icelandic blood. Of the Greenland colonies the Esquimaux had perpetuated many traditions, referring to the colonists

under the native name of *Kablunet*. But of the old European language that had been spoken among them for centuries, the fact is a highly significant one that the word *Kona*, used by them as a synonym for woman, is the only clearly recognised trace. But the Esquimaux, who thus took so sparingly from the languages of the old world, have contributed in a remarkable manner to them. The Tschuk-tchi, on the Asiatic side of Behring Strait, speak dialects of the Arctic American language. The Alaskan and the Tshugazzi peninsulas are in part peopled by Esquimaux; the Konogan of Kudjak island belong to the same stock; and all the dialects spoken in the Aleutian Islands, the supposed highway from Asia to America, betray in like manner the closest affinities to the Arctic Mongolidæ of the New World. Their languages are not only undoubted contributions from America to Asia, but they are of recent origin, as compared with the traces of relationship between those of the western hemisphere and the languages of Asia to which the latter bear any analogy. This is shown by the close affinities between the Esquimaux dialects of both continents, when contrasted with any recognisable evidence of some mutual but remote relationship, by which the Samoyede and the Fin are linked to the nations of the New World. With Asiatic Esquimaux thus distributed along the coast adjacent to the dividing sea; and the islands of the whole Aleutian group in the occupation of the same remarkable stock common to both hemispheres: the only clearly recognisable indications are those of a current of migration setting towards the continent of Asia, the full influence of which may prove to have been more comprehensive than has hitherto been imagined possible.

In every inquiry into the origin of civilisation, language must play an important part. The compass of the vocabulary is a true gauge of human progress. Whatever may have been the intellectual status of primeval man, we may be sure that names and terms followed in the wake of

mechanical, artistic, or scientific invention and discovery. The development of his vocabulary was the inevitable accompaniment of all other progress, whereby language was made subservient to intelligent volition, and adequate to human thought and perception. The origin of language has already found solution in hypotheses ranging through the widest extremes. Much has yet to be done before any other theory can supersede the supernatural one, as the source of its primitive roots ; and so find a solution for the first beginnings of language which shall commend itself to general acceptance, and take rank as a scientific truth. Nevertheless, looking on this question from the same novel point of view as is here proposed for the whole subject of primitive ethnology, it presents some aspects of suggestive significance. That the New World revealed to its first explorers, in the fifteenth century, no dumb anthropoid link between man and brute ; but nations as amply endowed with speech, and some of them even as far advanced in the maturity of ideographic systems of writing, as many of those of the Old World : is in itself no unimportant fact. But it is with man in the condition furthest removed from that of lettered races that we chiefly seek to deal ; and of this the Indian of the New World is a highly characteristic type. Numerous tribes occupied its forests and prairies, in a condition as nearly akin to the fauna on which they preyed as seems compatible with the ineradicable instincts of humanity. Such unquestionably had been their condition for many generations. Yet these savage tribes, devoid of letters, and of every trace of past or present civilisation, were found not only communicating their thoughts by means of intelligent speech ; but possessing languages of consistent grammatical structure, involving agglutinate processes of a complexity unknown before, and capable of being employed in effective native oratory, and even as vehicles of the sacred and profane literature of the Ancient World.

Language has been more frequently regarded as an attri-

bute of man, than as in any respect his own work ; and its existence in mature development among nations otherwise at so infantile a stage, might seem to lend countenance to the idea. But no modern advocate for the miraculous origin of language, assigns more than certain radical elements of the vocabulary to such a source ; and philological analysis yields so much that is an aftergrowth, that the sources of the residual elements are not beyond the pale of legitimate research. Reason and the organs of speech are human endowments indispensable to the further process of establishing a recognised relation between specific objects or ideas and articulate sounds ; and some process of the imitative principle based on a perception of relation between the one and the other, seems to commend itself to the mind as one which has played an important part in the development of primitive vocabularies.

Among the indigenous or purely native portions of any language, we may look with every probability for names for the most familiar fauna and flora pertaining to the habitat of the race. Abstract or generic terms, like the class of ideas they express, are of late growth in every language ; and even in our own are frequently borrowed from foreign tongues. The names of individual animals are needed before any want of the generic word, *animal*, is felt. Even the abstract idea of number is realised with difficulty by the uncultured mind, apart from specific objects enumerated ; nor does the mind necessarily perceive any common relation between forms, colours, odours, or other qualities of objects, noted only for their diversity ; so that even the Anglo-Saxon, after providing an ample native vocabulary for the reds, blues, blacks, browns, and whites, familiar to the eye by their differences, borrows the Latin *color*, to express their common relation ; as it has taken from the same foreign source that of *crime* as a generic term for the crimes with which its own vocabulary is replete. The paucity of abstract terms, common to all languages in a primitive

stage, is characteristic of the American Indian vocabularies. But it is an interesting feature in some of them, that abstract terms are traceable as roots employed in the formation of compound words, though they have no recognised independent significance. Such is the Algonquin *gummee*, water; *aubo*, liquid; *moo*, a path, or road; *kah*, abundance; *ashin*, a rock, or stone; and many similar roots used only in combination. The specific word for water is *nebee*; impure water, *nebeesh*; but in compound words *gummee*, or in certain cases the more general form of *aubo*, takes its place. Thus we find *kechegummee*, great water, as applied to Lake Superior; *mahduhgummee*, moved, or agitated water; *kez-hahgummee*, warm water; *tuhkahgummee*, cold water or other liquid. But *aubo* is the root which is generally employed in the latter sense, as in *showeminaubo*, wine; *ishkodaiwaubo*, whisky, fire-liquid; *ozhebiegunaubo*, ink; etc. *Showeminaubokaun*, a wine-press, illustrates still further the same process. *Ka* is another of the same class of composite roots, equivalent to: he makes; *kaun*, a place or instrument for making; e.g. *mukkesineka*, he makes moc-casins, or shoes; *cheemauneka*, he makes canoes; *buhquazheguneka*, he makes bread; *buhquazhegunekaun*, an oven, or place for making bread. But none of those roots is used independently. The separate word for "make" is *oozhetoon*; as for "rock" or "stone" it is *ahsin*; but in compound words *wahbik* takes the place of the latter, as in the *waubwahbik*, white-stone, or tin; *ozahwahbik*, yellow-stone, or copper, etc.

In the slow migrations of the human family language imperceptibly adapted itself to the novel requirements of each new locality. But with the discovery of America a new era began in the history of migration and all its attendant phenomena. Suddenly, in the maturity of Europe's fifteenth century, another world burst upon it, and the nations hastened to possess themselves of the land. But in its novel scenes language was at fault. Beast, bird, and

fish ; flower and tree ; art, nature, and man himself, were all strange ; and it seemed as if language had its work to do anew. The same has been the experience of every new band of invading colonists ; and it can scarcely fail to strike the European naturalist on his first arrival in the New World, that its English settlers, after occupying the continent for upwards of three centuries, instead of originating root-words wherewith to designate plants and animals, as new to them as the nameless living creatures were to Adam in Paradise : apply in an irregular and unscientific manner, the old names of British and European fauna and flora. Thus the name of the English partridge (*Perdix*) is applied to one American tetranoid, *Tetrao umbellus* ; the pheasant (*Phasianus*) to another, *Tetrao cupido* ; and that of our familiar British warbler, the robin, to the *Turdus migratorius*, a totally different American thrush. The process is so natural a result of the recognition of analogies, on which even the classifications of the naturalist depend, that the New England colonists gave the name of Ground Hog to the American Marmot ; and the Narragansett Indians, independently accepting the same analogy, applied its native name, *Ockgutchau*, to the European hog. A later stage in the process of word-making is seen in the designation of the cat-bird, the mocking-bird, the blue-bird, or the snow-bird ; while the adoption of native Indian names shows the very same means at work there which has been expanding the English vocabulary for the last thousand years, till the exotic terms greatly outnumber the whole native Anglo-Saxon element.

Thus variously, and in a lawless fashion, the popular vocabulary is adapted to new regions. The process belongs, in part, to the condition of vitality manifested by languages at a late stage of development, when the power of originating primary radicals has long been dormant. But it also suggests other inquiries in reference to names of animals to which I shall recur at a later stage. This much may be

noted meanwhile, that looking to names of the most familiar animals and plants, as they occur in languages of the Aryan, or the Semitic stock, each nation appears to have native etymons for such only as were themselves native to the original habitat of the race ; and thus there are to a certain extent, philological centres of creation, coincident with the supposed zoological ones. If man was primarily endowed not only with the faculty of giving articulate expression to thought, but with phonetic root-words which he instinctively applied to express certain ideas or attributes : he is still occasionally found in conditions in which such inherent instincts could scarcely fail to reassert their power. When cut off by privation of any of the senses ; or otherwise excluded, whether by organic defect or external circumstances, from sharing in the fruits of artificial training and transmitted experience : man's inherent faculties invariably reassert their power and repair in some degree the loss. So far, therefore, as language is the product of an instinct of the mind, there are cases in which some of its primitive conditions may be expected to reappear.

The illustrations of inherent human faculties which any well-authenticated case of man living solitary as a wild animal is calculated to supply, are so obvious, that they have been repeatedly sought for. Linnæus, when first directing his attention to ethnological classification, gave a prominent place to wild men, such as those occasionally found haunting the forests of Germany long after the desolating ravages of the French wars. Children orphaned and abandoned, had there occasionally survived to maturity, avoiding like any other wild animal, all subjection to human influence ; and though the stories told of such " wild men " have been grossly exaggerated, some well-established facts concerning them are significant and valuable.

A curious illustration of the natural process of name-making, furnished from such a source, has a direct bearing on the present inquiry. A youth who had roamed as a wild

denizen of the German forests, subsisting chiefly on eggs and birds, which he procured by his agility in climbing trees, was caught and received into the asylum established by Count von der Recke, at Overdyke. He devoured whatever food he obtained for himself raw; and retained his preference for it in that condition, in spite of every effort to reclaim him from the savage tastes thus contracted during his wild life. He had acquired an intimate familiarity with the habits of the birds which furnished his chief means of subsistence; and he had given "to every bird a distinctive and often very appropriate name of his own, which they appeared to recognise as he whistled after them."¹ Here the name, or sound, recognised by the bird was obviously imitated from its own notes by the same process which is called into operation under very different circumstances by the colonist when first acquiring knowledge of the fauna of a new region.

In every abrupt transition from one country to another and diverse one, the emigrant is placed, in relation to the nomenclature of its strange fauna and flora, in a position analogous to that in which we recognise the first origin of speech. But both the language which he uses, and the intellectual faculties employing it, are in a totally different condition from those in which the linguistic instincts of man first gave form and utterance to language. As languages in a late stage give birth to few root-words, so nations do not as a rule, create original names for foreign animals or plants; and no voyager or colonist is found to have invented them even for such strange objects as the *ornithorhynchus* of New Holland, or the *orycteropus* of the Cape. They either apply to them such modifications of some old term as suffice to express certain fancied analogies; or they borrow the unfamiliar foreign name, as alone applicable to the unfamiliar object. Thus the Raccoon is the Virginian *orokoun*, the Scratcher; the Wapiti is the Cree

¹ Vide *Anthropol. Review*, vol. i. p. 22.

wapatim, the white animal, applied to the deer in its winter coat; and the Opossum is the Delaware definition of the animal with the white face. Again, the strange quadruped to which Blumenbach gave the name of *Ornithorhynchus*, is the *mallangong* and the *tambreet* of the natives of New South Wales, while it is the duck-billed platypus of Dr. Shaw, and the water-mole of the English colonists. So also the *Orycteropus Capensis* is the *goup* of the Hottentot, and the *innagu* of the Caffre, while it is the *aard-vark* of the Dutch boer and the earth-pig of the English settler of the Cape of Good Hope.

But one class of exceptions to this law of language in its later stage of growth, finds illustration in the names of animals clearly traceable to imitation. The simplest of such names are mere mimetic voice-descriptions; but they recall that natural significance of sound which seems to lie at the foundation of all primary intelligent speech. Articulate sounds have, within a certain range, an inevitable association with certain specific ideas. In the complicated structure of modern languages, this natural significance of sounds has been so overlaid with the artificial growth of later times, that it can only be detected in fragments. Yet all languages have not only their onomatopœic terms, but a pervading adaptation of sound to sense and association. In many words describing sensible objects, operations, and cries, there is a mimetic element, which in the infancy of language must have been traceable over a larger portion of the vocabulary; and forcibly illustrates the distinction between the vocal utterances of the lower animals, and the intelligent speech of man. The onomatopœic theory will neither account for the origin of language, nor supply a complete series of roots for any portion of the vocabulary. But its influence as one natural source of root-words has been undervalued. Even now it pervades the most refined and artificial languages, like our own highly complex and composite English; so that the nice discrimination of the true orator manifests

itself in part in the choice of words harmonious to his thoughts; and the law of the poet is universally recognised :—

“Tis not enough no harshness gives offence,
The sound must seem an echo to the sense.”¹

By the simplest adaptation of this association of ideas, the European settlers in the New World have added to the stock of root-words. Thus the sloths of South America (*Bradypus communis*, and *Bradypus collaris*) have received from the Spaniard the name of *ai*, in imitation of the plaintive cry they emit when in motion in the forests. So also the Brazilian eagle (*Polyborus vulgaris*) is called the *caracara*, from its hoarse, peculiar utterance; and the boruardi, or large toucan (*Ramphastos toco*), is the *piapoco* wherever its voice has rendered that sound familiar. The whip-poor-will (*Caprimulgus vociferus*) is heard in the Canadian and American forests, uttering throughout a whole summer's night the name by which it is designated. The pewee (*Musicapa rapax*), the towhee (*Emberiza erythroptera*), the kittawake (*Larus tridactylus*), the chickadee (*Parus atricapillus*), the bobolink (*Dolichonyx oryzivorus*), and many other animals of the New World, have received local or generally accepted names, all illustrative of words originating in the same simple source of imitation as the Egyptian *hoff*, a serpent; *chao*, a cat; or the Sanscrit *kāka*, a crow; *kiki*, a jay; *bombhaza*, a bee; *kukkuta*, a cock.

Such examples not only illustrate a class of contributions to the vocabulary, consequent on migration, which the New World supplies; but also point to one, at least, of the primitive sources of language. Descriptive names, such as the turnstone, kingfisher, fly-catcher; or the white bear, red-poll, indigo bird, scarlet tanagee, or golden eagle; or, again, the hairy woodpecker, passenger pigeon, trumpeter swan, or tell-tale tattler,—with corresponding examples in

¹ Pope's *Essay on Criticism*, l. 363.

any ancient or modern language, as in the Sanscrit, where they abound,—manifestly imply the previous existence of names of colours and metals, and the development of descriptive epithets of various kinds. In no sense can such names be regarded as primitives; but such was not the characteristic of the earliest animal names, as may perhaps be illustrated by the familiar word *lion*, common to nearly all the languages of Europe. It appears to be an onomatopœic primitive, whether we seek its earliest form in the Greek *λέων*, or elsewhere. The lion was a native of Macedonia within historic times, and therefore needed no borrowed name in a Pelasgic or Hellenic tongue. The word, though of independent origin, has the same natural derivation as our English *low*, A.-S. *hleowan*, the cry or bellowing (A.-S. *bellan*) of a cow, as in the Sanscrit *go*, an ox; and also our *halloo*, as well as the verb to *hollo*, A.-S. *ahlōwan*: all imitations of natural sounds. Nor is the gain slight in such a process of analysis, when we thus trace a word to a simple natural origin. It is the only finality that is entirely satisfactory in etymology; contrasting in this respect with many a derivation hunted through English, Anglo-Saxon, and all intermediate stages, to a supposed Sanscrit root, still as arbitrary to us as the latest form with its associated significance. With slightly varying forms, the same word belongs to the oldest and most modern of the European languages, and has supplied to our own such tropical offshoots as *leonine*, *lionise*, and *lions* of that modern breed for which Carlyle suggests that, “in such *lion-soirées*, might not each lion be ticketed, as wine-decanterers are?” But the lion was also native to the area of the Semitic languages, and has its separate names, as though it had become known to them apart from those Eastern localities in which the Indo-European parent race and language had their origin. The Hebrew *aryeh*, *ari*, Syriac *aryo*, are descriptive, according to their derivation from the Hebrew verb, *arah*, to tear, to rend; and a similar derivation has been sought

for *leo*, λέων, *lion*, in the root *lā*, to tear, to destroy ; but it seems a needless process of inversion, where the sound is not without its suggestive mimicry. Of the similar source of the Coptic *mouee* there can be no doubt. The same designation has had its independent origin in the English nursery, from the lowing of the cow ; and is indeed nearly the repetition of the mimetic λέων, with the labial instead of the palatal liquid. Similar traces in the Coptic vocabulary acquire an additional interest from the fact that some of them are recovered from the most ancient graven records on the monuments of Egypt. The Teutonic horse, old high German *hros*, Mæsothetic *ross*, reappears independently in the Coptic *htor*, and is clearly mimetic, even if it be traced to the Sanscrit *hrésh*, neigh.

When Thoth, who was the god of letters, first appeared on the earth, there was a tradition, according to Plutarch, that the inhabitants of Egypt had no language, but only uttered the cries of animals, until he taught them speech, as well as writing. The cry of the Egyptian ibis still repeats its ancient name of *hippep*. By some curious association of ideas, it furnished to the Egyptian the symbol of speech. Thoth, the god of letters, had the ibis for his sacred animal, and is represented as the ibis-headed deity ; and from its name come the Coptic *hap*, judgment, *hōp*, to conceal, in reference to wisdom, secret or hidden knowledge. The illustrations of names derived from the cries of animals, which the language of ancient Egypt supplies, are numerous and striking. Take as examples : *mouee*, a lion ; *e'he*, a cow ; *htor*, a horse ; *eo*, an ass ; *baampe*, a goat or ram ; *uhor*, a dog ; *chao*, a cat ; *rurr* and *eshau*, a pig ; *phin*, a mouse ; *croor*, a frog ; *petepep*, a hoopoo ; *meni*, a swallow ; *hippep*, an ibis ; *djadj*, a sparrow ; *hoff*, a serpent. Other words expressive of actions or qualities had their origin in the Egyptian language by the same natural process of imitation, as : *owodjwedj*, to masticate ; *thophtheph*, to spit ; *omk*, to swallow ; *kradjkradj*, to

grind the teeth ; *rodjredj*, to rub ; *teltel*, to let water drip ; *sensen*, to sound, etc.

Those illustrations, derived from the language of the Egyptian monuments, are traceable to only one conceivable source ; and are essentially distinct from descriptive terms, such as reappear in the nomenclature adopted by European colonists of the New World. We have seen the readaptation of the vocabularies of one continent to the natural objects peculiar to another and essentially different one. This process is reversed when we turn to the native Indian languages. In them the animals introduced from Europe have almost invariably received a descriptive name. The horse is called, in the Cherokee, *sawquili*, the pack-carrier, from *u-sawqui-la*, he carries a pack. In the Delaware it is *nanayanges*, the animal that carries on its back ; and in the Chippewa, *pubashikogunzhi*, the animal with one hoof, or nail, on each foot. In the Dacotah it is rendered by a compound of '*sungka*, a dog, the only native beast of burden. Hence it becomes '*sungkawakang*, the spirit-dog, or marvellous beast of burden. The dog, as the sole domesticated animal of the Indians, becomes the generic term in many such compounds. In the Cree language *atim* is dog ; in the dialect of the Shyennes it becomes *otum* ; and is used in both as equivalent to animal. The Crees call the horse *mistatim*, literally the big dog ; and the wapiti, or stag *wapatim*, i.e. the white dog, in allusion to its winter fur. The Shyennes call the hog *ekusisiotum*, i.e. the sharp-nosed dog ; and the domestic cat *kaesiotum*, or the short-nosed dog. So also the Chippewa Indian, accustomed to clothe himself in the buffalo's skin, or other spoils of the chase, and totally ignorant of the art of weaving, styles European cloth *muhnedoowagin*, i.e. *muhnedoo* or *manitou*, a supernatural being, and *wagin*, the covering of an animal. The implied meaning is : the marvellous, or supernatural clothing. In all such epithets the contrast is obvious to such simple and seemingly arbitrary terms as are applied to the native fauna ;

as *shisheeb*, a duck ; *mezissa*, a turkey ; *ahtik*, a reindeer ; *moos*, a moose-deer ; *wahgoosh*, a fox, etc. Some may be of onomatopœic origin ; they are all little less simple than such ancient forms as the Sanscrit *acvāh* ; the Egyptian, *htor* ; the ἵππος, *equus*, *horse* ; the Sanscrit *kāka*, the κορώνη, *cornix*, *crow* ; etc. Two very diverse methods are thus applied in naming new objects, or novel phenomena, according to the mode in which they are first presented to the mind ; and even to different impressions produced by the same texture or sound, on the eye and ear. We thus perceive how, by such processes, many words may be called into existence by the presence of a single new object ; nor is it unimportant to note, in connection with this, how differently the same phonetic influences may impress the ear, and so be rendered into spoken or written language.

The variations in independent onomatopœic words derived from similar sounds are highly significant as illustrations of the growth of language. They arise not only from the diverse impressions received by the ear among different nations, but from the processes of selection and expression which the forms of each language suggest. Thus, to take one of the simplest articulate renderings of such imitative signs : the sound of the drum—Sanskrit, *duṇḍubhi*, Greek, τυμπανον,—which we write *rubadub*, the Frenchman renders *rattaplan*, the German, *trumberum*, the Hungarian, *czimbalom*, the Manchu, *tung-tung*, and the Chinese, *kan-kan*. The ancient Egyptian designated the ass, *ooo*, we render the same sound *he-haw*. So also the βρεκεκεκεξ κοῦξ of the frogs of Aristophanes is not the less an articulate imitation of their cry, because to the Egyptian ear it sounded *croor*, to the English it is *croak*, to the Algonquin Indian *an-koo*, and to the South Australian *kon-kan*. The Romans, with nicer discrimination, distinguished between the *coaxo* of the frog, and the *crocito* of the raven ; to the Algonquin Indian the latter becomes *gah-gau-ge*, and to the Mohawk *kaw-kor-yeh*. In part no doubt the above mimetic words

include representations of diversified sounds ; but they also illustrate the process of selection, guided by defined forms of each language, by means of which very different roots have their origin in a common source. Oronhyatekha, an educated Mohawk Indian, in replying to some queries addressed to him relative to his native language, thus writes to me in reference to the *Caprimulgus vociferus* or whip-poor-will : " When I listen with my Indian ears it seems to me utterly impossible to form any other word from an imitation of its notes than *kwa-kor-yeuh* ; but when I put on my English ears I hear the bird quite distinctly saying *whip-poor-will*." Assikinack, an educated Odawah Indian, wrote the same cry—heard nightly throughout the summer in the American forests,—*wha-oo-nah* ; and an Englishman, recently arrived in Canada, who listened to this cry for the first time, without being aware of the popular significance attached to it, wrote it down at my request *ch-poo-weh*. This illustrates the origin of dissimilar words—like the ancient Egyptian *eshau*, and the modern Algonquin *koo-koosh* for the sow,—from sounds of the same animal. We have various words for the diverse utterances of the dog ; discriminate in our vocabulary between the neigh, the snort, and the whinnying of the horse ; and otherwise recognise the different cries of each animal, as well as the diverse impressions produced by the same sound on different ears, dependent on their previous cultivation. From those, new words are eliminated by a process of natural selection ; and each one of them is capable of becoming, in its turn, the root of its grammatical group. The aborigines of South Australia have introduced into their own language the words *yang*, a saw ; *yarr*, to saw. Adding to these the affixes already existing in the language, they accordingly use as the verb, *yarr-bulliko*, to saw ; *yarr-bullikan*, a sawyer ; *yarr-bullingel*, a sawpit ; *yarr-batoara*, that which is sawn, a plank. So also they have *yang-kobulliko*, to sharpen a saw ; *yang-kobullikane*, that

which sharpens the saw, a file, etc. The onomatopœic process is manifest in other examples, both of native words, and those which have been introduced into the Australian dialects subsequent to intercourse with Europeans. The native name of the emu, for example, *kong-ko-rong*, is simply an imitation of its cry.

But the source thus far referred to will account only for a small portion of any vocabulary. With the growth of language, terms derived their significance from form, colour, and other attributes; while passion and feeling had their instinctive interjectional utterances always at hand. The native American languages abound in descriptive names; as is the case with many of those of Asia, and indeed with none more so than the Sanscrit, which is rich in synonyms for animals descriptive of their appearance, habits, cries, etc., and in poetical and figurative terms applicable to them. The mode of supplying the requisite names for foreign animals in the native American languages has already been illustrated in that of the horse. It differs in no respect from the process pursued by the most cultured nations for supplying the same want, as in the case of the ἵππος ποτάμιος or the *cameleopardalis* of the ancients; or the sealhorse, guinea-pig, or prairie-dog, of our own language. Thus the Algonquin *mishibizhe*, a lion, is compounded of *mishi*, great, and *bizhiw*, lynx or wild-cat; *paibikwahwegung*, a camel, is *paibikwahk*, that which has mounds or swellings on it. This again changes to *paikwahwegung*, a dromedary, by omitting the repetition of the second syllable, *bi*, which indicates the plural. *Kokoosh*, a sow,—a purely onomatopœic word,—is augmented to *pahgwahdgekokoosh*, the wild boar; and *pizhike*, equivalent to the generic *bos*, becomes *pimidah-bipizhike*, a draught ox, by being compounded with *pimidahbi*, he or it that draws. In the Athabaskan and other western dialects, a specific word exists for *slave*; but ideas accordant with the practice prevalent among eastern tribes of either putting to death the captives taken in war, or

adopting them into the tribe, are curiously illustrated by the Algonquin term, *ahwahkaune-wenene*, i.e. *ahwahkaune*, a working animal, and *wenene*, man. In some dialects the specific term *zahgon* is applied to the monkey; but in the Dacotah it is *wauncadan*, literally, the tree-climbing mocker; and on my asking its Odawah name from Assikinack, he designated it *nindomahkomashin*, which means literally the lice-hunter; as in the Chippewa dialect, in which it is rendered *oondumahkoomashe*, i.e. *nundom* to search, and *ahkoomashe* expressive of doing anything relating to lice. So also on asking the name of the tiger, my Indian informant promptly replied *katahgizid-mishibizhe*, i.e. the streaked or spotted, big wild cat; but he admitted on further questioning that he only designated it so in accordance with the usage of the language.

In the various classes of names, all more or less of a descriptive character, which thus in the American languages supply the place of primary terms, we see the Indian pursuing the universal process pertaining to the growth of language in its later stage, when it has the ample materials of a matured vocabulary to resort to. But primitives originating directly from the observation of natural sounds constitute an interesting branch of native root-words of the New World; though there, as elsewhere, they have been strained to give countenance to untenable theories of an onomatopœic element lying at the root of all primitive vocabularies. It is more consistent with the compass of this limited portion of language that such words are more frequently applied to terms suggested by sound alone, and to objects which rarely appeal to the eye. The wind, the thunder, the waterfall, the dash of the waves; or specific names—such as *Minchaha*, the laughing water,—fitly find expression from this source. Birds and reptiles are more frequently heard than seen; and are therefore better described by an imitation of their cries, or natural sounds, than by any reference to form or plumage. In some cases, as in the katydid, the

whip-poor-will, the chuckwill's widow, and the like, the name is further suggested by the repeated utterance of a cry closely resembling words which involuntarily carry with them quaint associations to the hearer; and are familiar to all, though their utterer is like the cuckoo, which the poet Wordsworth apostrophises as—

"No bird, but an invisible thing,
A voice, a mystery."

The following specimens of Indian onomatopœia have been noted down chiefly from the lips of Indians speaking the closely allied Chippewa, Odawah, and Mississaga dialects of the Algonquin tongue:—

Shi-sheeb, the duck.

Een-en-win, the duck. This cry is heard during spring from great flocks of ducks which then frequent the lakes.

Ah-ah-wa, a diver, a kind of duck.

Chee-chih-koo-wa, the plover.

Koo-koo-koo-oo, the owl; Mohawk, *O-ho-ho-oooh*.

Kah-kah-be-ah, the screech-owl.

Oo-oo-me-ee, the screech-owl.

Mai-mai, the red-crested woodpecker, which repeats this sound about ten times in quick succession.

Pau-pau-ay, the common spotted woodpecker; so called from the sound it makes in striking a tree with its bill.

Gah-laa-laa, a small owl, which repeats the cry *guh-laa* in the woods at night.

Tchin-dee, the blue jay.

Aund-a gosh-kwa, the crow; Mohawk: *Jo-kaw-ueh*.

Gah-pau-ge-shu, the raven.

Gah-yauah-ko-shu, the gull.

Kah-yauahh, the gull.

Bashh, a night-hawk.

Moosh-kah-oo, a kind of crane which frequents marshy places, and makes this sound, with a choking cry, in the evening.

No-no-no-kau-see, the humming-bird.

Shi-shi-gwa, the rattlesnake.

Pe-shew, or *hishew*, the lynx, or wild cat.

Koo-kooah, the sow; Mohawk: *Kwee-kwee*.

Pah-kah-ah-kwa, the cock or hen.

Aie-koo-ge-san, the frog.

Muh-kub-lu, the frog.

Dend-dai, the bull-frog.

Pau-pau-ki-nay, the grasshopper.

In all those names the terminal *n* has the French pro-

nunciation, as in *matin*. The corresponding evidence of the origin of expressions for inanimate things by a similar process of imitation, is still more interesting, as illustrative of the independent growth and expansion of languages. Thus *pwah*, to smoke tobacco, only occurs in compound words, as *pwah-gun*, a tobacco-pipe; *muh-na-pwah*, I am out of tobacco. The noise of waves, on the water, or dashing themselves against the rocks, is called *mah-dwa-yaush-kah*, i.e. the lake roars. The imitative sound, *yaush*, is sufficiently apparent. It is made to form a part of the name of the gull, the cry of which is generally accompanied by the sound of the waves; and is modified to express other noises, as *paush-ke*, it bursts with heat. The rustling of the wind through the trees is expressed in the Chippewa by *muh-twa-bah-gah-sin*; but as it travels through the forest, it produces different sounds, according to the character of the trees. In the pine forest it is a melancholy, prolonged gush, and is thus expressed in the Odawah dialect: *mah-dwa-yaund-ah-gah-shi*. This is applied to the wind when sweeping through all trees the foliage of which is perpetually green, as the hemlock, cedar, and pine; but when it sways the forest branches of the maple, beech, or oak, it is *mah-dwa-bi-mah-gah-shi*. So also the Indian says, *gaus-kwa*, it makes a rustling noise; *tchuh-tchumo*, he sneezes; *gwecsh-gwa-shi*, he whistles. He makes a noise with the hand on the mouth, is *sah-sah-qua*; it hails, *sah-sah-gun*; he coughs, *oo-soo-soo-dum*. To laugh is *bah-pěh*, to cry, *muh-wěh*; and many sounds pertaining to the arts and usages of the European intruders have given rise, in like manner, to the requisite additions to the Indian vocabulary: as *ut-to-tah-gun*, a bell; *paush-skezi-gun*, a gun; etc., by the very same process as gave to the ancient Sanscrit its *kinkint*, and to the Chinese its *tsiang-tsiang*.

In any recognition of the imitative principle playing a part, however small, in the origin of language, it is almost a

truism to point out the specific values of the phonetic signs recurring in certain classes of root words. The organs of speech, and their affection by various sensations and emotions, determine the interjectional expressions of joy, grief, fear, surprise, contempt, etc., and specially affect the vowels. The Sanscrit and Greek have their interjectional words as well as the Algonquin or Iroquois dialects. But the important point—to which I have directed special attention in watching the cries of the Indians in their games and dances,—is the extent to which certain recognised values appear to be attached to the majority of the long and short vowel sounds. It is true that interjectional utterance ends where speech begins. Inarticulate cries, expressive of wonder, joy, surprise, fear, doubt, interrogation, and the like aspects of sudden emotion, are unpremeditated and instinctive; and bear in a great degree a common character among all nations. But they are not therefore the barren equivalents of the inarticulate cries of the lower animals. From the latter we derive words expressive of the ideas of neighing, whinnying, lowing, barking, snarling, purring, etc.; but the former are, in a far higher sense, a ground-work of intelligent speech. They are traceable in many reduplications, and influence the choice of vowel-sounds in a large class of words. They are seen, moreover, to constitute a universal language, in circumstances where man is thrown back on such raw materials of speech as his only resource. An intelligent British officer, in illustrating to me the attempts at colloquial intercourse between the French and English troops during the Crimean war, described them as consisting largely of such interjectional utterances reiterated with expressive emphasis and considerable gesticulation.

But the consonants have also their rough or smooth, nasal, sibilant, slow, or abrupt and explosive characteristics, which in innumerable cases can be seen to have determined their selection as the fittest orthoepical representatives of

objects and ideas. When the Sanserit *kāraṇa*, a raven, is traced to the root *ru*, a verb applied to various sounds, as the bark of the dog, the lowing of the cow, and even the murmuring sound of running water, it seems an arbitrary finality, for which the appeal to "phonetic types" fails to furnish a satisfactory basis. But there lies beyond this a natural and associative significance in the rough, liquid *r*, as in Sanser. *rorud*, to cry greatly; Eng. *roar*: as a reason for its adaptation to ideas which no other phonetic would represent so expressively.

In every search for the primitive portions of a vocabulary, the family is recognised as the basis of social and national life; and it is rightly assumed that the equivalents for father, mother, sister, brother, son, and daughter, may be looked for among the most ancient portions of the vocabulary, whatever be the etymology assigned to them. Before the first offshoot of the great Indo-European family wandered forth from the common home, those terms had been adopted, from among the various designations applicable to parents, which have ever since prevailed throughout its widely scattered branches. The roots *pa* and *ma* are related to too many derivations to admit of their being dissociated from *pātar* and *mātar*; but however it be accounted for, the same roots reappear in many savage dialects unaccompanied with other traces of a common origin.

According to the received etymology, neither mother, Sanserit *matri*, nor father, *pitrī*, is a primitive in any of the numerous forms which they assume. *Matri* is traced back to the root *ma*, to measure, to regulate; *māmi*, I measure; whence comes *mās*, the moon, *māsa*, a month, and *manu*, the thinker, man. *Pitrī*, father, is derived in like manner from Sanser. *pā*, to protect; *bhrātri*, brother, from *bhri*, to support; *duhītri*, daughter, from *duh*, to milk, etc. Such a process assumes that the term expressive of the idea of *father*, instead of originating in the nursery, followed in the wake of the recognition

of paternal protection and other patriarchal attributes; that of *mother* was only devised long after the child had grown up, forgetful of maternal nursing, and learned to esteem her as the regulator of domestic affairs: like the Saxon lady, *lafdige*, or bread distributor. So also, the son received a name in the old age, or on the death of the father; and the daughter had to tarry for a designation till the maturity of pastoral life had found for her the avocation of dairymaid. But Lassen suggests the more literal derivation of *duhitri* from *duh*, to draw, to milk, in the sense of the suckling; as the root of son appears to be *su*, to beget, and so might fitly give name to the begotten, the man-child.

In the wondrous ramifications of language from a common centre, it is difficult to limit the compass of its influences. No one is likely to argue any necessary connection from such chance agreements as the English *aye* and the Tarawan *aia*, yes; the modern Greek *mati*, and its Malay or Polynesian equivalent *mata*, for the eye; or the ancient Greek *λαμπάς*, and the Papuan *lap*, fire. Such similarities in isolated words are compatible with a total independence of origin; and least of all should we anticipate Aryan affinities in the vocabularies of Australia or New Zealand. Yet when we find not only in the Muruya dialect of Australia *papute*, and among the Maories of New Zealand the simpler *pa* for father; and then recognise that among specimens of thirty different languages of the Malay Archipelago, given by Mr. A. R. Wallace, by far the larger number are variations of the Malay *bápa*, father, and *ma*, mother; and that the same reappears in Polynesian vocabularies: it is seen to be a possible thing that the Sanscrit, the Malay, the Tarawa, and even the Muruya *pa* and *ma* may, after all, have come independently from a common source.

But, notwithstanding the evidence which points to oceanic migration through the island archipelagos of the Pacific to the continent of America, it is more difficult to

conceive of affinity to an Aryan source when the Sanscrit *ma* reappears in the *Mama Oello*, or *Eve* of the *Peruviana*. Among them *mama* signified mother, *mamaconos*, matron ; even as among the ancient Greeks we find the corresponding *μάμα*, and the *πάππα φιλε* of *Nausikaa*, in the *Odyssey*. The Romans used *mamma* for the mother's breast ; the Hindu and Persian *ma* bear the same signification ; and wherever Aryan influence has prevailed the familiar roots reappear. But they do so also among the *Tlatskani* of *Athabaska*, the *Tahalics* of *British Columbia*, and many others of the savage tribes of the *New World*. In some of the *American languages* *ma* is the masculine designation ; in others it retains a feminine significance. Among the *Tlatskani* and *Tahalics* *mama* signifies father and *naa* mother. The *Kootemays* use *mapaa* for father, and *máa* for mother. The *Navajo* and *Tenan-Kutchin* *mah* or *sho-mah*, the *Weitspek* *mamus*, the *Arapahoe* *nanah*, the *Sioux* *enah*, *Tuscarora* *ená*, *Kenay* *anna*, *Adahi* *amanie*, *Guinau* *amma*, and the *Esquimaux* *amama*, are all suggestive of the same primitive origin ; for they are not mere dialectic changes of one root-word. The *Guinaus* are of *South America*, the *Navajo* Indians belong to *New Mexico*, the *Sioux* to the *North West*, the *Tenan-Kutchin* to *Alaska*, and the *Tlatskani* and *Esquimaux* to the *Arctic Circle*, while totally diverse vocabularies intervene.

In those, and similar instances, the correspondence is doubtless accidental. The origin of the Indian terms may be traced to a greatly simpler process, which nevertheless may not have been without its influence on the survival in the *Indo-European* tongues of the same roots which most readily adapt themselves to infantile utterance. If the lips are parted abruptly in the act of breathing, the sound *ma*, the simplest interjectional utterance of the nursery, is produced ; and its association with the idea of mother or nurse in so many languages lends countenance to such an origin for it. If again the lips are brought more

abruptly in contact, and suddenly parted while breathing, *pa*, another of the natural nursery roots of language, is produced. The former, as the more simple and involuntary sound, most frequently retains the maternal associations; but this natural origin is confirmed by the variations in different languages. In these we find the *pappa*, *baba*, *tata*, *dada*, *nana*, etc., interchangeably used for father, mother, or other near relative; and also for nurse, midwife, etc.; and corresponding with these are the *poppa*, *mamma*, *tetta*, *pap*, and *teat*, for the mother's breast.

By such a combination of organic influences, and associated ideas, the origination of root-words may go on in modern, as in the most primitive tongues. But the organic influences thus indicated, and the associative significance of liquid, guttural, explosive, sibilant, or other sounds, already insisted upon as helping to determine the primary value of certain phonetic signs, and the meaning of a large class of root-words, suggested a very different line of reasoning to the most philosophical among the naturalists of the New World. "As for languages," says Agassiz, "their common structure, and even the analogy in the sounds of different languages, far from indicating a derivation one from another, seem to us rather the necessary result of that similarity in the organs of speech which causes them naturally to produce the same sound. Who would now deny that it is as natural for men to speak as it is for a dog to bark, for an ass to bray, for a lion to roar, for a wolf to howl, when we see that no nations are so barbarous, so deprived of all human character, as to be unable to express in language their desires, their fears, their hopes? And if a unity of language, any analogy in sound and structure between the languages of the white races, indicate a closer connection between the different nations of that race, would not the difference which has been observed in the structure of the languages of the wild races—would not the power the American Indians have naturally to utter gutturals which

the white can hardly imitate,—afford additional evidence that these races did not originate from a common stock, but are only closely allied as men, endowed equally with the same intellectual powers, the same organs of speech, the same sympathies, only developed in slightly different ways in the different races, precisely as we observe the fact between closely allied species of the same genus among birds?"¹ Here the writer faces boldly the extremest conclusions to which such premises lead. *Race* is employed as the equivalent of *species*, and philological affinities in languages are viewed as no more than the similarity of intonation in the notes of closely allied species of birds or beasts. They did not acquire such corresponding utterances by learning each other's notes; and so the writer proceeds: "Why should it be different with men? Why should not the different races of men have originally spoken distinct languages as they do at present, differing in the same proportions as their organs of speech are variously modified? And why should not these modifications in their turn be indicative of primitive differences among them?"

But here the relation between language and the organs of speech is forced into an assumed identity, sustained only by superficial analogies. Man possesses indeed a faculty of vocal utterance, dependent on his organic structure, which is the true equivalent of the voice of the lower animals; but he has, over and above this, the power of evolution of intelligent language by which to communicate his thoughts to other men. This is his grand distinction among animated beings. But the miraculous element is reason, not language. Endowed with that, and possessing the organs of speech, all else lies within the compass of his own work. Nevertheless the phenomena presented by the American variety of man, as well as by the allied species of animals suggesting comparisons with others of the same genus in Europe and Asia, took strong hold on the mind of the gifted American student,

¹ *Boston Christian Examiner*, Art. *Types of Manhood*, p. 282.

in whose process of induction, philological affinities and the grammatical structure of languages were of small account. In his latest contribution on this subject he observes: "Much importance is attached to the affinity of languages, by those who insist on the primitive unity of man, as exhibiting in their opinion, the necessity of a great affiliation between all men. But the very same thing might be shown of any natural family of animals: even of such families as contain a large number of distinct genera and species. Let any one follow upon a map exhibiting the geographical distribution of the bears, the cats, the hollow-horned ruminants, the gallinaceous birds, the ducks, or of any other families, and he may trace as satisfactorily as any philological evidence can prove it for the human language, and upon a much larger scale, that the brumming of the bears of Kamtchatka is akin to that of the bears of Thibet, of the East Indies, of the Sunda Islands, of Nepal, of Syria, of Europe, of Siberia, of the United States, of the Rocky Mountains, and of the Andes; though all these bears are considered as distinct species, and have not any more inherited their voice one from the other, than the different races of man."¹ The same argument is applied throughout the different species referred to, down to the gay and harmonious notes of the thrushes, uttered by all "in a distinct and independent dialect, neither derived nor inherited one from the other, even though all sing *thrushish*."

So far as this ingenious analogy affects the question of innate or inherited voice, it amounts to no more than this, that bears are bears, and men, men. No philologist imagines the human voice to be inherited in any other sense than every part of man's organic structure is inherited. But neither does any philologist doubt that the language which his organs of speech enable him to express is inherited, that is, derived from others by imitation and memory, in a way that no inferior animal's utterances are acquired. The

¹ *Indigenous Races of the Earth*, p. xv.

affinities thus noticed relative to such closely allied systems of intonations running through each whole family are full of interest: though not from any analogies they present to the affinity of languages. They rather seem to illustrate the striking contrast between the gift of speech and the origin of language. Each living being has its special organs of voice and utterance, and perpetuates these with all the other specialities of its peculiar organisation. The mew of the cat embraces, along with a labial consonant, the whole range of vocalic sounds, *mi-a-e-o-u*, but so also does the familiar noise of a door swinging slowly on its hinges. The vocal sounds of the human voice can be executed with an organ stop, for they are produced mainly by the breath being expelled through the throat and mouth, lengthened or shortened by the lips according to the required note. So also the same organs of sound, when employed in whistling, can be made, like the artificial pipe, to imitate all the varied notes of singing-birds. But the finch transferred to the neighbourhood of the lark, or the cuckoo reared in the nest of the linnet, does not lose its own notes for those of its companions: as the English child reared in France or Italy, or stolen by the wild Indian of the American forests, acquires the speech of its nurse, and unless controlled in its utterances, loses its own mother tongue. Trained, moreover, by its Indian foster-mother, it acquires a vocabulary adapted to the objects and ideas which alone present themselves to its mind, and speedily forgets words which are no longer the symbols of ideas.

The grand object in the construction of a vocabulary being to obtain the requisite number of vocal signs for objects and ideas, the amplest vocabularies are the most complex, and inconsistent; though the first process of accumulation is followed by a careful remodelling and selection from the miscellaneous hoard, ending there, as elsewhere, in the survival of the fittest. But all this is something very different from the origin of language. "There could

be no invention of language," says William Humboldt, "unless its type already existed in the human understanding. Man is man only by means of speech, but in order to invent speech he must be already man." To discern this we have to turn from the vocabulary to the grammar; and the further we follow up any language towards a conceivable beginning, the more consistent its grammatical forms prove to be. The irreconcilableness of this with the idea of man's development from any inferior, unintelligent order of beings, is not unworthy of notice. Such a conception presupposes an animal devoid of speech; and as intellect dawns on it in its first stage of development into the reasoning and reflecting being, its originally limited powers of utterance gradually extend their compass, and language would thus be the slow product of effort, practice, and culture. On such a theory the detached elements of a vocabulary would be the first product; the scientific relations of the grammatical forms of language would pertain only to its latest stages, and in their most perfected condition, to written languages. But the opposite is the case; justifying the inference that it is the work of an intelligent mind comprehending and using forms and laws of structure involved in the relations of language to the innate perceptions of individuality, time, place, and all other discriminating niceties of what we call grammar.

Looking at the origin of language by the natural processes here suggested, it is obvious that its unity may be too strongly insisted on as an inevitable consequence of unity of race; for the perception of the natural significance of articulate sounds, though blunted, is by no means lost. The exclamatory use of nearly all the vowel sounds has a universally recognised significance. The instinctive and involuntary emotional utterances are in like manner common to man; and all ears respond to the cultivated sounds of domesticated animals, and especially to the varying tones of man's dumb companion, the dog. There it is, if at all,

that we find any analogy to human language. Its whine, its bay, its whimper, its bark, its yelp, its growl, its snarl, its snap, its howl, are each distinct utterances; some of them are acquired results of domestication and intercourse with man, and every one of their names is a word directly derived from this dog-language. An intelligent dog can be spoken to, and catches many ideas from the sounds of its master's voice; while he, again, can tell by the tone of its bark, when it is greeting an acquaintance, threatening an intruder, repelling a beggar; or only indulging in that liberty of speech which is the birthright of every civilised dog, and taking an abstract bark at things in general. Yet amid all the marvels of canine or equine instinct and sagacity, no true analogy to language can be recognised in the audible growl or snarl of two quarrelsome dogs, or the friendly whinny with which a horse greets his mate.

By the processes indicated, portions of national vocabularies must have originated independently, and may receive augmentations at any stage of the growth of a language. Nor is the correspondence of such words in different languages proof of common derivation. They constitute a distinct species of words, and belong primarily to far older formations than the additions borrowed from foreign languages to supply the growing necessities which civilisation creates. Derived, however, from such natural sources, each locality and region will thus have certain distinctive features of its own. The very cries of animals, and the modulated rhythms of the wood-songsters, as well as the natural sounds peculiar to mountain, sea-coast, forest, and prairie, give origin to terms which become peculiar native root-words of certain localities.

The growth of *patois*, such as the Pigeon English of China, and the more singular Oregon Jargon, illustrates the influence of the same process, under the diverse circumstances resulting from abrupt intercourse of races widely dissimilar in speech. Languages as remote in grammatical

structure as in euphonic expression there supply the elements out of which a new tongue has to be framed ; and the process shows some equally curious results, in the modification of sounds, and the readaptation of old terms and grammatical forms to the ear and voice of a miscellaneous population baffled by its own confusion of tongues. Left to themselves such strange patois would no doubt marshal their miscellaneous elements under grammatical forms as regular as those which the debased Romance dialects assumed in the process of reformation and growth into independent languages ; while the vocabularies would embody evidence of the history of their growth ; and of the strange admixture out of which new races, as well as new languages, were in process of formation.

While thus noting obscure ethnical and philological genealogies, it may be worth recalling, that, along with older traces of linguistic affinities which lie beyond and within the discontinuous Ugrian area : analogies with the polysynthetic element of the American languages have been long sought in the peculiar agglutinate characteristics of the Euskara or Basque. It would be a remarkable and most unlooked for result of the ingenious hypothesis of Arndt and Rask, if it were found to resolve itself into ancient tide-marks of two great waves of population : the one the broad stream of Indo-European migration setting north-westward towards the shores of the Atlantic ; and the other an overflow from the western hemisphere, also setting westward, but in those higher latitudes of which history has taken no account, and only coming within the range of observation as it breaks and disperses in the shock of collision with the world's later historic stock. Yet such is not utterly improbable. The shores of the Indian Ocean were doubtless reached by an early wave of aboriginal population. Prof. H. H. Wilson points out in his edition of the *Rig Veda Samhita*, as specially worthy of notice, that at the remote epoch of the earliest of the Vedas, the Aryan Asiatics were

already a maritime and mercantile people. With the development of skill and enterprise, maritime wanderers must have speedily passed over into the nearer island groups. From thence to the remoter islands was as easy at an early as at any later date; and a glance at a hydrographic chart of the Pacific will show that a boat, driven a few degrees to the south of Pitcairn, Easter, or the Austral Islands, would come within the range of the Antarctic drift current, which sets directly towards the Chili and Peruvian coasts. It is, moreover, among the eastermost of those Polynesian islands that Captain Beechey noted the occurrence of colossal statues on platforms of hewn stone, or frequently fallen and mutilated: objects of vague wonder only, and not of worship, to the present inhabitants, who appear to be incapable of such workmanship. Similar sculptures, indeed, were observed on other islands, now uninhabited, and many traces indicate an ancient history altogether distinct from that of the later island races. Wanderers by the oceanic route to the New World may therefore have begun the peopling of South America long before the north-eastern latitudes of Asia received the first nomads into their inhospitable steppes, and opened up a way to the narrow passage of the North Pacific.

On the new continent itself abundant materials present themselves for study. Among the Atnahs, Chinooks, Nasquallies, and other tribes on the Oregon coast, the uncouth clicking sounds, equally harsh and undefined to European ears, resolve themselves, when reduced to writing, into the *tli*, *tel*, *atl*, *iztli*, and *yotl*, of the most characteristic Mexican terminations. But looking at such traces as analogous to one of the old Mexican migration-pictures, the important question is, What is the direction of the footprints? Do they reveal the trail of the advancing Mexicans as tracks left behind them on their way towards the plateau of Anahuac, or are they the mere reflex traces of later and indirect Mexican influence? The latter I conceive to be the most

probable by all just estimate of the very partial nature of the traces. And yet they are curiously suggestive, and full of interest, affecting as they do both the languages and arts of the North-west. In this direction, however, while facilities for intercourse between America and Asia are obvious enough, the only well-defined indications of their use are by those hyperborean nomads who have sought a new home in Asia.

But confining our view to the American continent, the north and south tropics were the centres of two distinct and seemingly independent manifestations of native development; and many points of contrast between them tend to confirm the idea of intimate relations between the immature north and such matured progress as Mexican civilisation had achieved. But also this idea receives confirmation from equally clear indications of an overlapping of two or more distinct migratory trails leading from opposite points. The ebb and flow of the northern and southern waves of migration within the area of the northern continent have left many tidal marks, with evidence of some interchange of arts, and a considerable admixture of blood. These have already been referred to in considering the physical and intellectual characteristics of the Mound-Builders. But this further may be admissible here in the form of suggestive hypothesis. The dolichocephalic form of cranium predominates among the northern tribes, as well as among the Esquimaux. That of the Mound-Builders, in so far as at present determined, appears to have been very markedly brachycephalic. The tribes lying between the country of the Mound-Builders and Mexico presented an intermediate type, and were superior in artistic skill to the northern nations. May it not be that we have here traces of an irruption of northern barbarians on the semi-civilised Mound-Builders, an extermination of the males, an extensive intermarriage with the females, and the usual results, of which the history of European nations furnishes many illustrations?

The Central American civilisation, the most matured of all to which the New World gave birth, was, I conceive, mainly of southern origin. Much that pertained to Mexican arts and polity was still more clearly derived from the north. But there are also evidences of mutual interchange. It must be borne in remembrance that we have in reality no such thing as a pure race among the historic nations of the old world. Admixture, not purity, seems an essential element of progress. The Greeks were no pure race, still less were the Romans; and neither are the Spaniards, the French, the English, nor the Anglo-Americans. If we want pure, that is, unmixed blood, we must seek it in the hut of the Fin, the tent of the Arab, or in the Indian wigwam. There is abundant evidence that the races of Peru, Yucatan, and Anahuac were the products of great intermixture: it may have been of closely allied races, but also, and more probably, of widely diverse ones. In Central America especially we are tempted to conceive of the possible meeting of immature South American civilisation with that which an essentially distinct migration had borne across the Atlantic: it may be, in accordance with the cherished dream of the modern American, while yet the fleets of Tyre and Carthage passed fearlessly beyond the Pillars of Hercules into the great engirdling ocean of their ancient world. Here, at any rate, are such indications of intermixture and interchange as investigation helps us to recover. South America had her immature picture-writing, her sculptured chronicles or basso-relievos, her mimetic pottery, her defined symbolism and associated ideas of colours, and her quipus. North America had her astronomical science, her more developed though crude picture-writing, her totemis, pipe-sculpture, and wampum; and also her older Mound-Builders, with their standards seemingly of weight as well as of mensuration. Each had a nearly equally developed metallurgy. In Central America we seem to look on the mart of intellectual interchange, and the centre

towards which all elements of progress converge in the grand product of that native civilisation still so wonderful in its ruins. The idea may be intelligibly presented to the eye thus :—

SOUTH AMERICA.

The Quipu.
Bas-relief Chronickings.
Mimetic Pottery.
Metallurgic Art.
Agricultural Science.
Beasts of Burden.
The Balance.
Peruvian Azimuths.

NORTH AMERICA.

The Wampum.
The Totem.
Picture-writing.
Mimetic Pipe-sculpture.
Metallurgic Art.
Geometrical Mensuration.
Metallic Currency.
The Astronomical Calendar.

CENTRAL AMERICA.

Architecture.
Fictile Art.
Portrait-sculpture.
Hieroglyphics.
Numerals.
Letters.

To the characteristics thus distributed among the more civilised nations of the New World, have to be added that strange custom of cranial deformation, ancient Asiatic as well as American, and not unknown to the islanders of the Pacific. It is common to nations north and south of the Isthmus of Panama, yet seemingly more truly indigenous to the southern than the northern continent; and it seems quite as probable that it was derived by the Asiatic Macrocephali, as that they originally contributed it from their Eastern steppes to the prairies and forests of what we style the New World.

The idea which harmonises best with the varied though still imperfect evidence thus glanced at, when viewed in connection with a supposed Asiatic cradle-land, assumes the earliest current of population destined for the New

World to have spread through the islands of the Pacific, and to have reached the South American continent before any excess of population had diffused itself into the inhospitable northern steppes of Asia. By an Atlantic oceanic migration, another wave of population occupied the Canaries, Madeira, and the Azores, and so passed to the Antilles, Central America, and probably by the Cape Verdes, or, guided by the more southern equatorial current, to Brazil. Latest of all, Behring Strait and the North Pacific Islands may have become the highway for a northern migration by which certain striking diversities among nations of the northern continent, including the conquerors of the Mexican plateau, are most easily accounted for. But of this last, especially, the evidence is chiefly inferential; and the more obvious traces rather indicate the same current which set from Southern Asia to the Pacific shores of South America, moving onward till it overflowed by Behring Strait and the Aleutian Islands, into the continent from whence it was originally derived. But such are only guesses at truth, suggestive it may be of more definite views, and permissible in gathering up the stray links of such accumulated though still very imperfect evidence.

That man has everywhere preceded history is a self-evident truth. But the reasoning by means of which his existence in geological periods has been inferred, proceeds mainly on the assumption that he was then, as now, a rational being, manifesting some of the most characteristic attributes by which he is still distinguished from the whole irrational creation. It is consistent with later experience that evidences of his mechanical industry should be recovered most abundantly amid traces of a rigorous climate. But the more favoured regions of the earth, where nature spontaneously provided for his requirements, may nevertheless be regarded as the primeval habitat and true birthplace of man. There indications of his advent are still to be looked for; not without some characteristic evidence of his primi-

tive condition. The very presence of the men of the Drift in regions still under the rigour of an Arctic climate is suggestive of their inferiority to contemporary races, such as it cannot be doubted had then their abode in climates better suited in all respects to be the habitat of man; for neither on the hypothesis of Simian evolution, nor from any study of man in what has been inaccurately regarded as a state of nature, can he be correctly classed among an Arctic fauna.

THE END.

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